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NI 43-101 Technical Report
Green River Potash Project
Grand County, Utah, USA

Prepared for

MAGNA RESOURCES
POTASH ON AMERICAN SOIL

Prepared by

Leo J. Gilbride, P.E.
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Effective date

10 October 2012

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NI 43-101 TECHNICAL REPORT
GREEN RIVER POTASH PROJECT
GRAND COUNTY, UTAH
USA

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1.0 SUMMARY

Agapito Associates, Inc. (AAI) was commissioned by American Potash, LLC (American Potash) to provide an independent Qualified Person (QP) review and National Instrument (NI) 43-101 Technical Report (the Report) on the Green River Potash Project (GRPP) Property (the Property) located near the town of Moab in Grand County, Utah, United States of America (USA). This report incorporates information from a maiden NI 43-101 report (Allen 2009) on the Property prepared for American Potash. The Allen report (2009) was an informational document focused on the Property's incipient exploration potential. This report quantifies the Property's potash exploration potential in the form of an NI 43-101 Exploration Target. This report is a re-issuing of a 12 September 2012 version of the same report and contains modifications to the recommendations for future exploration as well as clarifications on historical resources.

American Potash, a Nevada limited liability corporation, is a wholly owned subsidiary of Magna Resources Ltd. (Magna). Magna is a company dedicated to the acquisition and development of potash mineral deposits in the USA and elsewhere, and trades on the Canadian National Stock Exchange under the symbol MNA. Magna consolidated 100 percent (%) membership interest in American Potash after acquiring Confederation Minerals Ltd.'s (Confederation) (CNSX:MNA) 50% interest in American Potash on 12 January 2012. Through its wholly owned subsidiary, American Potash, LLC, the issuer has a 100% interest in the property.

1.1 Property Description

The Property encompasses 20,620 hectares (ha) of land owned by the State of Utah and the Bureau of Land Management (BLM) located in Grand County, Utah, 32 kilometers (km) west of Moab and Arches National Park, and is adjacent to the Green River to the west and Canyonlands National Park to the south. The Property is accessed by the Blue Hill Road off of US Highway 191 at a point 23 km south of Crescent Junction (intersection of US Highway 191 and Interstate 70). Alternate access is available via numerous improved and unimproved roads from US Highway 191 and Interstate 70. The Canyonlands Field airport, which services Moab and the surrounding area, is located on US Highway 191 at the Blue Hills Road.

The town of Moab is the county seat of Grand County and the principal town in the region with a population of approximately 5,500. The Property is located approximately 32 km west of Moab and is within a 50 minute drive from the center of town. Originally a uranium mining center, Moab has an experienced workforce and well established infrastructure to support exploration activities. The BLM Moab District field office is located in Moab.

Interstate 70, a major traffic corridor, connects the Property with Grand Junction (180 km) and Denver (570 km) to the west, and Salt Lake City via Highway 6 to the northwest (370 km). Major oil and gas pipelines and electrical transmission lines pass through utility corridors east of the Property adjacent to Highway 191 and north of the Property adjacent to Interstate 70, and along a northwest-southeast corridor immediately northeast of the Property. Natural gas is abundant from wells and collector pipelines on and around the Property.

The Union Pacific Railroad Central Corridor mainline connects Denver and Salt Lake City and runs adjacent to the Interstate 70 corridor approximately 18 km north of the Property's north boundary. The Cane Creek Subdivision railroad spur, a common carrier line, runs from Thompson, Utah, to the Moab potash solution mine operated by Intrepid Potash Inc. (Intrepid). The spur parallels Highway 191 approximately 16 km east of the Property's east boundary.

The Property encompasses relatively flat, sparsely vegetated terrain on the east side of the Green River, consisting of broad stepped mesas with low rolling hills generally ranging in elevation between 1,370 and 1,670 meters (m), but incised below 1,200 m in southwest-draining creek gullies and along the Green River canyon. The topography is sufficiently flat to accommodate evaporation ponds on various parts of the Property. The arid to semi-arid climate is suitable for solar evaporation. Intrepid's Moab potash mine operates approximately 160 ha of evaporation ponds.

1.2 Tenure and Surface Rights

The Property comprises 11 state potash leases totaling 2,853 ha and 25 federal potash prospecting permit applications (PPA) totaling 17,767 ha. American Potash also holds 1,295 ha of federal placer claims staked over a portion of the federal potash prospecting permit area.

American Potash acquired the state leases by competitive filings on 9 November 2009 and 15 August 2011. American Potash holds 100% title to the potash mineralization through the state leases, including all chlorides, sulfates, carbonates, borates, silicates, and nitrates of potassium. Lithium rights are included as a chloride.

On 26 June 2008, Sweetwater River Resources, LLC (Sweetwater), a Wyoming private company, filed applications with the BLM for 31 federal potash prospecting permits comprising the majority of the Property (25,593 ha). In 2009, American Potash entered an option agreement to purchase the exploration rights for the Property from Sweetwater. American Potash applied for two additional prospecting permits adding another 912 ha to the application area on 1 December 2011.

Prospecting permits grant the exclusive right to prospect on and explore lands available for leasing to determine if a valuable deposit exists. Applications are prioritized based on the time of filing and are mineral specific. Prospecting permits for potassium (potash) are effective for an initial 2-year term and can be extended for a second 2-year term. Prospecting permits entitle the permit holder to apply with the BLM for a preference right lease if a valuable deposit can be demonstrated and BLM determines that the lands are chiefly valuable for potassium. Preference right leasing allows a company invested in prospecting activities to secure mineral tenure by leasing without participating in a competitive lease sale. Leases are typically granted for 20-year terms.

In May 2011, American Potash signed a Memorandum of Understanding (MOU) with the BLM Utah State Office for the purpose of facilitating prospecting activities on the Property outside the pending BLM "Ten Mile" Known Potash Leasing Area (KPLA) expansion boundary. The Ten

Mile KPLA boundary was not established at the time the MOU was signed, although it was expected to encroach upon and eliminate a south-central portion of the Property.

The objective of the MOU for the BLM was to separate approval of prospecting from leasing and establish the scope of environmental analysis required to consider approval of the PPA's. On 5 March 2012, the BLM filed a notice of intent in the Federal Register (Vol. 22, No. 43) to prepare a Master Leasing Plan (MLP), amendments to the Resource Management Plans (RMP) for the Moab and Monticello field offices, and an associated Environmental Impact Statement (EIS).

The outcome of the MLP process may result in new mineral leasing stipulations and development constraints accomplished through amendments to the land use plans. The EIS will analyze likely development scenarios and land use plan alternatives with varying mitigation levels for mineral leasing. The Proposed MLP and final EIS are forecast to be completed in summer 2014.

The BLM does not anticipate granting any leases by competitive sale or preference right until sometime after the MLP and EIS are completed. Any decision to grant potash leases, whether inside or outside the Ten Mile KPLA, will be subject to the environmental standards stipulated in the future MLP.

On 4 May 2012, the BLM officially designated the Ten Mile KPLA expansion. This action established that the lands within the Ten Mile KPLA will no longer be available for non-competitive leasing for potash and may instead be available through a competitive leasing process. The newly established Ten Mile KPLA boundary overlies a portion of American Potash's PPA's and, as a result, reduced the Property by 8,739 ha from 29,358 ha to 20,620 ha.

As of the effective date of this Technical Report, the PPA's lying outside the Ten Mile KPLA boundary remain under BLM review and no decision of approval or denial has been rendered. As such, American Potash has yet to secure tenure to the federal potash rights on the Property.

1.3 Geology

The Property is located within a geologic province known as the Paradox Salt Basin that extends approximately 160 km in width and 320 km in length in a northwest-southeast direction spanning southeastern Utah and southwestern Colorado, with small portions in northeastern Arizona and northwestern New Mexico. During middle Pennsylvanian time, the Paradox Basin formed as a restricted shallow marine environment marked by 29 evaporite sequences as defined by Hite (1960) with facies change towards basin-edge to shallow and open water marine sediments. The limestone-dolomite-anhydrite-halite sequences are broken by siliciclastic beds marking periods of sediment influx related to glaciation (Hite 1961). The apex of the penesaline to hypersaline evaporation in a sequence may be marked by the accumulation of potassium salts.

Potash is noted in 17 of the 29 evaporite cycles (Hite 1983). Intrepid is solution mining potash in Cycles 5 and 9. The Moab Mine is located about 32 km west of Moab, Utah, and 14 km southeast of the Property. The mine began as a conventional underground mining operation in 1965 and was converted in 1971 to a system using solution mining to extract the potash and solar evaporation to re-crystallize the product.

1.4 Exploration Targets

The GRPP Property contains significant potash mineralization in sufficient quantities and of sufficient grade to be an attractive target for exploration and further study of solution mining potential. Lithium brines also occur on the Property and represent upside solution mining potential. Potash is present in at least six evaporite cycles on the Property. Of these, Potash 5 is the principal bed of interest. Potash 18 occurs in sufficient grade and thickness to be of interest to the east off the Property. The grade of the other prominent beds, Potash 6, 9, 13, and 16, are too low to be of current economic interest. Potash 16 shows improved grade and thickness beyond the Property to the north.

Potash 5 is a regionally extensive sylvinite bed in the northern Paradox Basin and is continuous in solution-mineable thicknesses across a majority of the Property, based on the preliminary interpretation of downhole electric log (elog) data from 33 oil and gas wells dispersed across the Property or within 8 km its borders. Potash 5 is classified as an NI 43-101 Exploration Target projected to contain between 0.6 and 1.0 billion tonnes of sylvinite with an average grade ranging between 12 and 18% eK_2O (19 and 29% eKCl), assuming a bed thickness cutoff of 2.0 m and a composite grade cutoff of 10% eK_2O. Potash 5 ranges between 1,200 and 1,900 m deep on the Property.

Preliminary analysis of elog data suggests that Potash 5 is generally thin and low grade to the west and improves in thickness and grade across the Property to the northeast. The best resource appears centralized to the northeast quadrant of the Property where Potash 5 ranges from about 3 to 6 m thick at 14 to 16% eK_2O (22 to 25% eKCl). Regional information suggests that attractive occurrences of Potash 5 persist to the east beyond the Property boundary.

Table 1-1 summarizes the Potash 5 Exploration Target.

Exploration Targets are conceptual in nature and there has been insufficient exploration to define them as Mineral Resources, and, while reasonable potential may exist, it is uncertain whether further exploration will result in the determination of a Mineral Resource under NI 43-101. The Potash 5 and Potash 18 Exploration Targets are not being reported as part of any Mineral Resource or Mineral Reserve.

1.5 Conclusions

The Property is an early-stage exploration property. Principal risks associated with advancing the Property are geologic uncertainty and uncertainty with mineral tenure. Risks associated with the future feasibility of solution mining, which include engineering design, permitting, and environmental, socioeconomic, and market constraints, are concerns to be evaluated at later stages.

Table 1-1. Potash 5 Exploration Target
(effective date 10 October 2012)†

Potash 5			
Average grade (% eK_2O)	12	–	18
Average grade (% eKCl)	19	–	29
Average thickness (m)	2.5	–	5
Tonnage (Mt)	600	–	1,000

† Target cutoffs: 10% eK_2O bed composite grade and 2.0-m bed thickness.

The principal risk at the exploration phase is geologic uncertainty. While oil and gas well data indicate strong bed continuity across the property, variations in potash thickness, grade, and mineralogy are possible. Faults, collapse features, diapirism, and other structural disturbances can sterilize resource locally. Sylvinite mineralogy can be affected by varying depositional environments or structure, including basement carbonate mounds, algal reefs, post-depositional gypsum dewatering, groundwater leaching along fault conduits, and by other complex depositional and structural features.

Carnallite and halite intrusions are known to occur in the Paradox Basin and can degrade or eliminate sylvinite resource on a localized or regional basis. The loss of grade or introduction of problematic mineralogy can substantially affect the size of a potential resource. Exploration drilling is required to define the presence or absence of these features and the thickness and grade variability of the deposit before a Mineral Resource can be claimed. Core drilling and chemical analysis is required to confirm grade and mineralogy.

Mineral tenure is not secure on the federal lands comprising the majority of the Property and poses a risk to advancement of the project. While American Potash is well positioned with respect to acquiring mineral rights through the federal potash PPA process, risk exists that American Potash may be denied approval of some or all of the PPA's depending upon the outcome of the 2014 MLP being developed. The path forward to potash leasing through the PPA process is uncertain because of special terms under American Potash's MOU with the BLM which subjects preference right leasing to the outcome of the pending 2014 MLP, which could include new mineral leasing stipulations and development constraints amended to the land use plans. The scope of stipulations may or may not substantially affect leasing and/or future development of the Property.

In January 2012, the BLM publically expressed willingness to grant approval for the commencement of prospecting activities in the Paradox Basin while the MLP is being drafted. However, the BLM cautioned that the investment in prospecting activities, including exploration drilling, and successful demonstration of a valuable deposit do not guarantee that BLM will grant a potash lease. The BLM could permit exploration drilling on lands that will be later deemed unleasable.

Exploration drilling on the Property is warranted based on existing geologic evidence, notwithstanding any risk associated with securing mineral tenure on federal lands. Initial exploration drilling should be focused in the northern part of the Property where Potash 5 resource potential is highest.

1.6 Recommendations

Potash 5 warrants exploration drilling for the purpose of defining the potash resource. Initial exploration drilling should focus on the northern part of the Property where the Potash 5 potential is highest. Specific recommendations and budgetary costs for a first and second phase of exploration are as follows:

Phase I Geology/Exploration—Drill one exploration core hole to prove grade, thickness, and mineralogy in the most prospective area around historical well Quintana Fed 1-1 targeting Potash 5. The Quintana Fed 1-1 well shows a Potash 5 intercept of 5.9 m at a composite grade of 15% eK_2O (24% eKCl). Potash 18 is not present at this location. Estimated cost is $1.99M.

Run a complete geophysical suite for evaluation including gamma ray, spectral gamma, neutron, density, caliper, and sonic. Estimated cost is $40,000.

Assay the potash zone at 0.3-m intervals and at least 2 m into the salt above and below the potash bed. Estimated cost is $6000.

Estimated cost for the Phase I exploration drilling program is $2.0 million.

Phase II Geology/Exploration and Seismic Evaluation—Pending favorable results from the Phase I exploration drilling program, step-out drilling is recommended in Phase II for the purpose of upgrading the Potash 5 Exploration Target to a Mineral Resource. Four additional holes are recommended for defining an initial Mineral Resource in the north area.

In addition, two prospect holes are recommended in the southern part of the Property to assess the presence of Potash 5 to the south.

Run a VSP in at least one well for the purpose of generating a synthetic seismogram to improve the analysis of existing 2D or future 2D or 3D seismic measurements. The downhole log for the VSP is a dipole sonic that collects wavelength velocities around and below the drill hole. Estimated cost of a VSP survey is $20,000 to $40,000.

As referenced above the, estimated cost for the drilling of six holes and related downhole geophysical work and assay is $12.0 million to $18.0 million. Each hole will cost about $1.99 M to drill and the cost to run a complete geophysical suite is $40,000 per hole. Assay work is estimated at about $6000 per hole.

Four 2D trade seismic lines covering the northern half of the Property were acquired and interpreted by a third-party consultant. Tops of interest were selected. The four lines were interpreted as showing no major structure influencing the beds of interest. Little information has been provided as supporting documentation on this interpretation. A report describing the methodology, while not critical to the exploration drilling plans, would substantiate the interpretation of continuity of the salt cycles and the regional structure. If this work is done after the VSP work is completed, a seismogram could be generated, correlated to the existing seismic lines, and possibly, refine the structural model.

Recommendations are to complete a technical report substantiating the interpretation. Estimated cost for the seismic analysis and reporting is $30,000 to $60,000.

Estimated cost for the entire Phase II program is $12.3 to $18.6 million.

In March 2012, American Potash received approval from the State of Utah to commence exploration drilling on one of its northern state leases. American Potash plans to drill a first hole, named “Duma Point,” targeting the Potash 5 in Section 2, Township 24 South and Range 17 East (Salt Lake Meridian) near historical well Quintana Fed 1-1. Two additional drilling permits on state leases are pending.

2.0 INTRODUCTION

AAI was commissioned by American Potash to provide an independent QP review and the Report on the Property located near the town of Moab in Grand County, Utah, USA. This report incorporates information from a maiden NI 43-101 report (Allen 2009) on the Property prepared for American Potash. The Allen report (2009) was an informational document focused on the Property's incipient exploration potential. This report quantifies the Property's potash exploration potential in the form of an NI 43-101 Exploration Target.

American Potash, a Nevada limited liability corporation, is a wholly owned subsidiary of Magna. Magna is a company dedicated to the acquisition and development of potash mineral deposits in the USA and elsewhere, and trades on the Canadian National Stock Exchange under the symbol MNA. Magna consolidated 100% membership interest in American Potash after acquiring Confederation (CNSX:MNA) 50% interest in American Potash on 12 January 2012.

On 26 June 2008, Sweetwater, a Wyoming private company, filed applications with the BLM for 31 federal potash prospecting permits comprising the majority of the Property (25,593 ha). In 2009, American Potash entered an option agreement to purchase the exploration rights for the Property from Sweetwater. American Potash also purchased exploration rights to the following lands in Arizona as part of the agreement:

- 3,921.4 ha of Arizona State lands and BLM lands in the southwest Holbrook Basin
- 1,295.0 ha of Arizona State lands in Apache County
- 679.9 ha of BLM land in Navajo County, Arizona

A news release by Magna dated 3 June 2009 outlines the terms of the agreement:

> *The option agreement entitles American Potash to acquire a 100% interest in the Permits, subject to a 2% royalty to the Optionors (Sweetwater) which may be bought back for $2,000,000(US). The option may be exercised by Magna and Confederation each paying a total of $135,000(US) and each issuing in aggregate 1,000,000 shares to the Optionors, as follows: $35,000(US) on signing of the option agreement; 100,000 shares upon grant of the Permits representing not less than 25,000 acres; $25,000(US) cash and 300,000 shares on or before the first, second and third anniversaries of the grant of the Permits; and a final $25,000(US) cash on or before the fourth anniversary.*
>
> *With the exception of certain permits already issued in Arizona, all references to the Utah and Arizona exploration permits are references only to permits that are yet to be issued pursuant to existing applications submitted by the Optionors. There is no assurance that exploration permits will be issued or that all those issued will be contiguous. In addition to royalties payable to the Optionors, the Utah prospect will be subject to federal royalties (minimum 5% of gross value of output) and the Arizona prospect will be subject to federal or state royalties.*

The Property in Utah is considered the principal property of the land package.

The terms of Magna's subsequent acquisition of Confederation's 50% interest in American Potash is summarized in Magna's 20 January 2012 news release:

> *At closing, Confederation transferred to Magna its interest in American Potash in exchange for 22,420,000 common shares and 2,400,000 common share purchase warrants. Each warrant entitles Confederation to purchase a further common share at a price of CAN$0.10 until February 25, 2016. Concurrent with the transfer, Confederation subscribed for 6,666,666 common shares of Magna at CAN$0.30 per Share for gross proceeds to Magna of CAN$2,000,000.*
>
> *As a result of the transaction, Magna now holds a 100% membership interest in American Potash LLC, which holds certain potash leases and an option in respect of certain potash lease applications in the State of Utah. With the share and warrant issuances on closing, Magna now has an aggregate of 51,506,666 common shares and 4,800,000 common share purchase warrants exercisable at CAN$0.10 per share issued and outstanding (on a non-diluted basis), of which 56.47% of the shares and 50% of the warrants are held by Confederation.*

Confederation agreed to provide interim financing to Magna, the proceeds of which will be used for the advancement of operations at the American Potash properties and for general working capital purposes.

2.1 Terms of Reference

AAI obtained project information and data during an initial meeting on 22 June 2011 at AAI's head office located in Grand Junction, Colorado. Additional information was supplied by American Potash and Magna personnel through meetings at AAI's Grand Junction office and/or by correspondence. American Potash and Magna provided AAI with the following information:

- Overall project scope
- Company history and background
- Property ownership, location, and mineral tenure
- Public domain geophysical logs from oil and gas wells
- Anaconda Cycles 5 and 9 grade-thickness contour map
- 2011 2D trade lines seismic analysis

Key reference texts are included in the References section of Report. Relevant data were reviewed in sufficient detail for the preparation of this Report. The following AAI personnel provided QP review and support:

- Leo J. Gilbride, P.E., acted as project manager, reviewed technical data, and developed the Exploration Target estimate and conclusions (Sections 1–6 and 13–27). Mr. Gilbride visited the Property on 25 April 2012.
- Vanessa Santos, P.G., reviewed geological literature, legacy data, historical geophysical logs, and seismic data, and developed conclusions (Sections 1–3, 7–12, and 25–27). Ms. Santos visited the Property on 25 April 2012.
- AAI technical staff (geologists, engineers, and Geographical Information System [GIS] specialists) provided support to the QP's that authored this Technical Report on geological analysis and map preparation used in the development of the mineral assessment.

2.1.1 Units

Units used in this Technical Report are expressed in the metric system unless otherwise noted. As the project is located in the USA, currencies are expressed in 2012 USA dollars (USD). The exchange rate as of the report effective date was approximately US $1.00 equal to Canadian $0.979.

2.1.2 Acronyms and Abbreviations

Agapito Associates, Inc.	AAI
American Petroleum Institute	API
American Potash, LLC	American Potash
Approximation Base on Smoothing	ABOS
Bureau of Land Management	BLM
Buttes Resources Company	Buttes
centimeter	cm
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
CIM Definition Standards on Mineral Resources and Mineral Reserves	CIMDS
Code of Federal Regulations	CFR
Confederation Minerals Ltd.	Confederation
degrees Celsius	°C
electric log	elog
Environmental Impact Statement	EIS
Geographical Information System	GIS
grams per cubic centimeter	g/cc
Green River Potash Project Property	the Property
halite	NaCl
hectare	ha
Intrepid Potash Inc.	Intrepid
kilometer	km
Known Potash Leasing Area	KPLA
Magna Resources Ltd.	Magna
Master Leasing Plan	MLP
Memorandum of Understanding	MOU
meter	m

million tonnes	Mt
million years ago	Ma
millisecond per foot	msec/ft
halite (sodium chloride)	NaCl
National Environmental Policy Act	NEPA
National Instrument	NI
North American Datum of 1983	NAD83
percent	%
potassium chloride	KCl
potassium oxide	K_2O
prospecting permit application	PPA
Qualified Person	QP
Resource Management Plan	RMP
Reunion Potash Company	Reunion
sylvite (potassium chloride)	KCl
Sweetwater River Resources, LLC	Sweetwater
Texasgulf Sulphur Company	Texasgulf
three-dimensional	3D
tonnes per cubic meter	t/m^3
tonnes per year	tpy
two-dimensional	2D
Utah Division of Oil, Gas and Mining	UDOGM
Utah Geological and Mineralogical Survey	UGMS
Utah Geological Survey	UGS
Utah State Geographic Information Database	USGID
United States Geological Survey	USGS
United States of America	USA
Universal Transverse Mercator	UTM
U.S. Code	USC
U.S. Dollars	USD
Vertical Seismic Profile	VSP
Wilderness Study Areas	WSA

3.0 RELIANCE ON OTHER EXPERTS

The authors state that they are QP's for those areas as identified in the appropriate QP "Certificate of Qualified Persons" attached to this Technical Report. The authors have relied upon and disclaim responsibility for information derived from the following expert opinions and reports pertaining to mineral tenure, surface rights, access and permitting issues, and environmental liabilities as allowed under Item 3 of Form 43-101F1.

This Technical Report carries forward the principal body of information reported in the NI 43-101 Technical Report titled *Report on the Potash Potential of the Green River Potash Project Area, Grand County, Utah*, dated 15 August 2009, prepared by Gordon J. Allen, P. Geo. (Allen 2009). The QP's accept certain information provided by Allen as reproduced in this Technical Report.

3.1 Mineral Tenure

AAI QP's have not reviewed mineral tenure, nor independently verified the legal status or ownership of the mineral title, and underlying property agreements. AAI has relied upon American Potash for this information from Erica Anderson's (American Potash support staff) 29 March 2012 email titled "American Potash - permit info. Attached," including two unpublished PDF files listing federal potash PPA's (UT BLM Permits 3-2012.pdf) and state potash leases (State Trust Lease 3-2012.pdf).

The QP's did confirm the activity status and leaseholder or applicant name for all mineral rights identified by American Potash via the relevant online databases administered by the BLM and State of Utah. Although no conflicts were identified, this does not constitute an expert legal opinion. Instead, the QP's relied on American Potash and its experts on all matters of mineral tenure.

3.2 Surface Rights, Access, Permitting, and Environmental

American Potash has agreements with the BLM that were negotiated directly by American Potash for facilitating prospecting activities on the Property. AAI QP's have relied on information regarding the status of current surface rights, road access, and permits through opinions and data supplied by American Potash, Magna, and independent experts retained by American Potash for Sections 4.2 and 4.3 of this Technical Report. American Potash and Magna provided interpretation of and guidance on the following agreement with the BLM: MOU between American Potash and the BLM Utah State Office for the purpose of facilitating prospecting activities on the GRPP Property outside the BLM pending "Ten Mile" KPLA, May 2011.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Property encompasses 20,620 ha of land owned by the State of Utah and the BLM, located in Grand County, southeastern Utah, USA (Figure 4-1).

4.1 Location

The Property is located in Grand County, Utah, 32 km west of Moab and Arches National Park (Figure 4-2). The Property is adjacent to the Green River to the west and Canyonlands National Park to the south. The Property is located on the United States Geological Survey (USGS) San Rafael Desert and Moab 1:100,000 scale topographic maps. The Property is centered at Universal Transverse Mercator (UTM) North American Datum 1983 (NAD83) coordinates of zone 12N 593,000E and 4,273,000N, and encompasses parts of Townships 23 to 26 South by Ranges 16 to 19 East, Salt Lake Meridian.

4.2 Mineral Tenure and Agreements

The Property comprises 11 state potash leases totaling 2,853 ha and 25 federal potash PPA totaling 17,767 ha, as shown in Figure 4-3. American Potash also holds 1,295 ha of federal placer claims staked over a portion of the federal potash prospecting permit area. American Potash has surface access as authorized by the BLM and the State of Utah, and as stipulated under the terms of the Potash Prospecting Permit Applications (BLM) or State Potash Leases (Utah). Under the PPAs, BLM restricts activities to exploration only, including prospect drilling; no extraction is prohibited. The State leases are unrestricted and allow exploration through extraction provided specific plans are submitted to and approved by the State.

4.2.1 State of Utah Potash and Lithium Leases

American Potash acquired the state leases by competitive filings on 9 November 2009 and 15 August 2011, as summarized Table 4-1. American Potash holds 100% title to the potash mineralization through the leases, including all chlorides, sulfates, carbonates, borates, silicates, and nitrates of potassium. Lithium rights are included as a chloride. Nine of the leases (2,464.7 ha) are active for a primary 10-year term starting 1 December 2009 and expiring 30 November 2019. The remaining two leases (388.5 ha) have a primary term beginning 1 September 2011 and expiring 31 August 2021. Leases ordinarily can be extended electively after expiration of the primary term. All leases were current and annual rent paid in full as of the effective date of this Report. Annual rental obligations to maintain the leases are summarized in Table 4-1.

Leases are granted under the authority of the Utah Administrative Code, as compiled and organized by the Division of Administrative Rules (Subsection 63G-3-102(5); see also Sections 63G-3-701 and 702), and described under Rule R850-25 Mineral Leases and Material Permits. Filing information is available through the Utah Trust Lands Administration and online at http://trustlands.utah.gov.

Figure 4-1. Green River Potash Project Property General Location Map

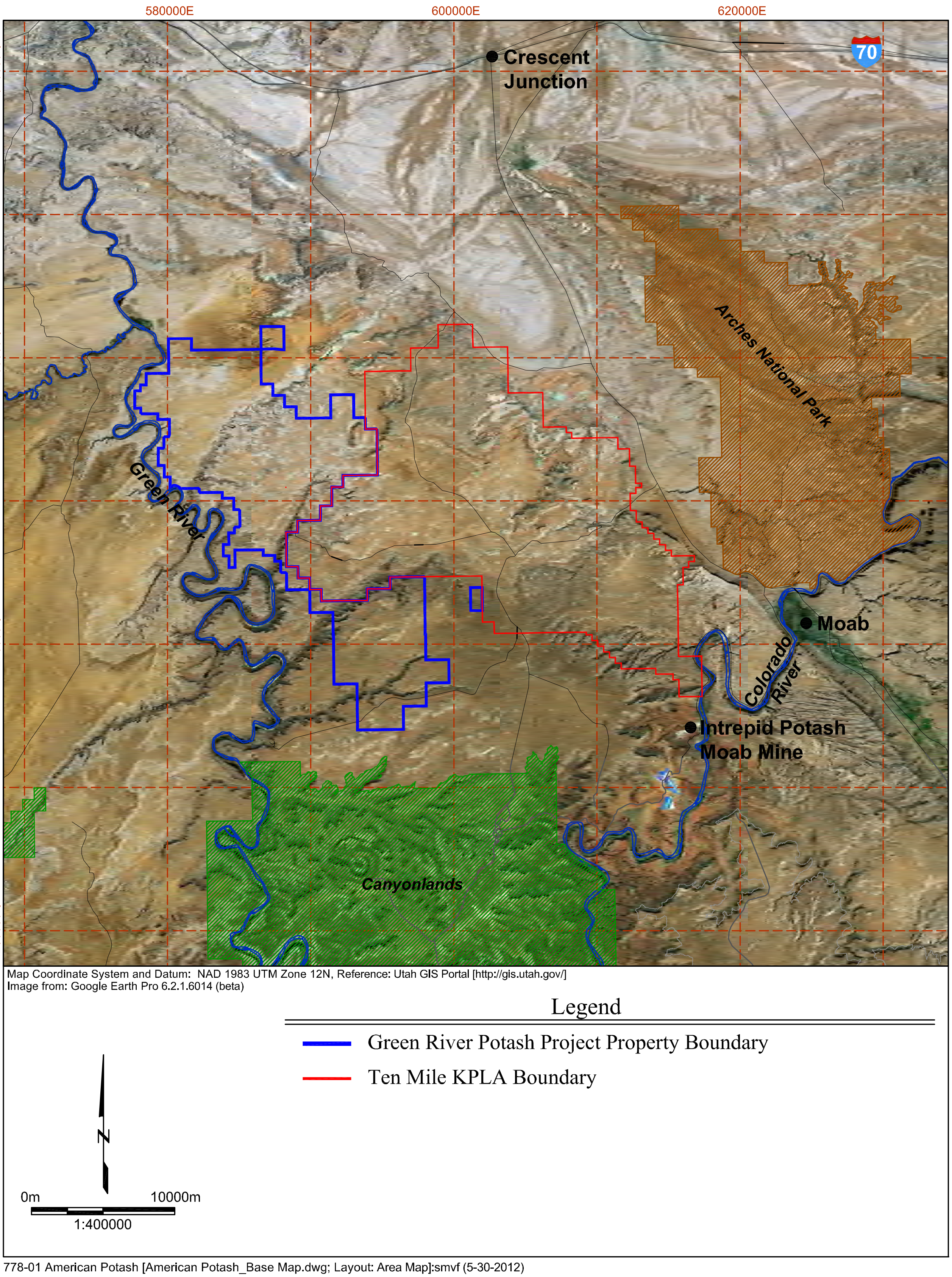


Figure 4-2. Green River Potash Project Property Area Map

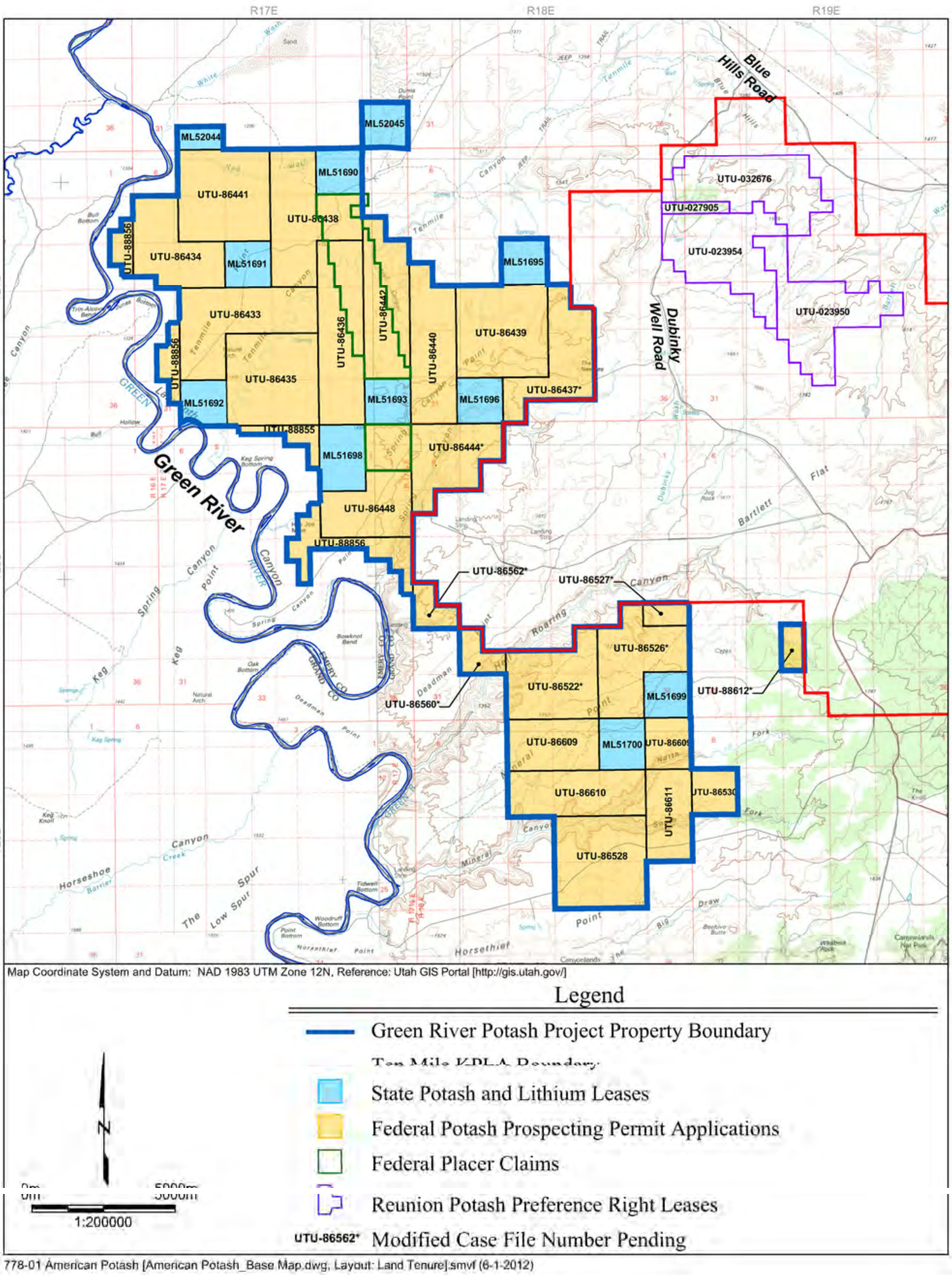


Figure 4-3. Green River Potash Project Property Land Tenure Map

Table 4-1. American Potash State Potash and Lithium Leases

Serial Number	Type	Date Begin	Date Expire	Lessee	Hectares	Annual Rental Rate†
ML51690	Potash	1-Dec-09	30-Nov-19	American Potash LLC	260.0	US$2,572.00
ML51691	Potash	1-Dec-09	30-Nov-19	American Potash LLC	259.0	US$2,560.00
ML51692	Potash	1-Dec-09	30-Nov-19	American Potash LLC	246.9	US$2,444.00
ML51693	Potash	1-Dec-09	30-Nov-19	American Potash LLC	259.0	US$2,560.00
ML51695	Potash	1-Dec-09	30-Nov-19	American Potash LLC	259.0	US$2,560.00
ML51696	Potash	1-Dec-09	30-Nov-19	American Potash LLC	259.0	US$2,560.00
ML51698	Potash	1-Dec-09	30-Nov-19	American Potash LLC	373.2	US$3,692.00
ML51699	Potash	1-Dec-09	30-Nov-19	American Potash LLC	259.0	US$2,560.00
ML51700	Potash	1-Dec-09	30-Nov-19	American Potash LLC	289.5	US$2,864.00
ML52044	Potash	1-Sep-11	31-Aug-21	American Potash LLC	129.5	US$1,280.00
ML52045	Potash	1-Sep-11	31-Aug-21	American Potash LLC	259.0	US$2,560.00
				Total:	2,853.2	US$28,212.00

† Rental rates US$4.00/acre for Years 1 to 5 and US$5.00/acre Years 6 to 10.

Surface rights on the state potash leases belong to the State of Utah, with the exception of ML52044 where surface rights are privately owned.

In March 2012, American Potash received approval from the State of Utah to commence exploration drilling on one of its state leases. American Potash plans to drill the first hole, named "Duma Point," targeting the Cycle 5 potash zone in Section 2, Township 24 South and Range 17 East (Salt Lake Meridian), Grand County, Utah. Two additional drilling permits on state leases are pending.

4.2.2 Federal Potash Prospecting Permit Applications

Sweetwater filed applications for 31 potash prospecting permits with the BLM on 26 June 2008, covering 25,593 ha (Table 4-2). In 2009, American Potash purchased the rights to the PPA's and has been working with the BLM to advance plans for potash prospecting since that time. American Potash applied for two additional prospecting permits adding another 912 ha to the application area on 1 December 2011.

Prospecting permits grant the exclusive right to prospect on and explore lands available for leasing to determine if a valuable deposit exists. Applications are prioritized based on the time of filing and are mineral specific. The leasing of solid minerals other than coal and oil shale, including potash Prospecting permits and leases, is codified under 43 Code of Federal Regulations (CFR) §3505, issued under the authority of the Mineral Leasing Act of 1920, as amended (30 U.S. Code [USC] 181 *et seq.*) and other acts as described in 43 CFR §3501.1.

Prospecting permits for potassium (potash) are effective for an initial 2-year term and can be extended for a second 2-year term. Permits are maintained by paying a rent of US$0.25 per acre for the first year, followed by US$0.50 per acre per year for the remaining life of the permit.

Surface rights on the federal potash PPA's belong to the BLM.

Table 4-2. Federal Potash Prospecting Permit Applications

Serial Number	Applicant	Township	Range	Legal Description	Hectares
		Salt Lake Meridian			
UTU-86433	Sweetwater	T24S	R17E	Sec. 20, 21, 22, 29 all	1,036.0
UTU-86434	Sweetwater	T24S	R17E	Sec. 7 E1/2 NW1/4, E1/2 SW1/4, NE1/4, S1/4; Sec. 17 all; Sec. 18 E1/2 NW1/4, NE1/4 SW1/4, NE1/4, SE1/4 Lots 1-3	739.4
UTU-86435	Sweetwater	T24S	R17E	Sec 27, 28,33,34 all	1,036.0
UTU-86436	Sweetwater	T24S	R17E	Sec. 14, 23, 26, 35 all	1,036.0
UTU-86437‡	Sweetwater	T24S	R18E	Sec. 22, 27, 33, 34 all	777.0
UTU-86438	Sweetwater	T24S	R17E	Sec. 3, 10, 11, 15 all	1,035.8
UTU-86439	Sweetwater	T24S	R18E	Sec. 20, 21, 28, 29 all	1,036.0
UTU-86440	Sweetwater	T24S	R18E	Sec. 18 E1/2 SW1/4 Lots 3-4; Sec. 19 E1/2 NW1/4, E1/2 SW1/4, NE1/4, SE1/4 Lots 1-4; Sec. 30 E1/2 NW1/4, E1/2 SW1/4, NE1/4, SE1/4 Lots 1-4; Sec. 31 E1/2 NW1/4, E1/2 SW1/4, NE1/4, SE1/4 Lots 1-4	846.3
UTU-86441	Sweetwater	T24S	R17E	Sec. 4, 5, 8, 9 all	1,035.8
UTU-86442	Sweetwater	T24S	R17E	Sec. 12 SW1/4, Sec, 13, 24, 25 all	841.8
UTU-86443†	Sweetwater	T25S	R18E	Sec. 3, 4, 10 all	*Eliminated*
UTU-86444‡	Sweetwater	T25S	R18E	Sec. 5, 6, 7 all	751.8
UTU-86446†	Sweetwater	T25S	R18E	Sec. 11, 14, 15, 22 all	*Eliminated*
UTU-86448	Sweetwater	T25S	R17.5E	Sec. 1, 11, 12 all	891.5
UTU-86517†	Sweetwater	T25S	R19E	Sec. 8, 9, 17, 20 N1/2	*Eliminated*
UTU-86518†	Sweetwater	T25S	R19E	Sec. 6, 7, 18 all	*Eliminated*
UTU-86519†	Sweetwater	T25S	R19E	Sec. 19, lots 1,2 E1/2NW1/4, NE1/4	*Eliminated*
UTU-86521†	Sweetwater	T25S	R19E	Sec. 33 NE1/4, Sec. 34 N1/2, Sec. 35 W1/2	*Eliminated*
UTU-86522‡	Sweetwater	T25S	R18E	Sec. 27, 28, 33, 34 all	841.8
UTU-86526‡	Sweetwater	T25S	R18E	Sec. 23, 25, 26, 35 all	841.8
UTU-86527‡	Sweetwater	T25S	R18E	Sec. 12, 13, 24 all	129.5
UTU-86528	Sweetwater	T26S	R18E	Sec. 14, 15, 22, 23 all	1,036.0
UTU-86529†	Sweetwater	T25S	R19E	Sec. 23, 26 W1/2	*Eliminated*
UTU-86530	Sweetwater	T26S	R19E	Sec. 7 all	258.2
UTU-86560‡	Sweetwater	T25S	R18E	Sec. 20, 21, 29 all	194.3
UTU-86561†	Sweetwater	T25S	R18E	Sec. 8, 9, 17 all	*Eliminated*
UTU-86562‡	Sweetwater	T25S	R18E	Sec. 18, 19 all	196.3
UTU-86609	Sweetwater	T26S	R18E	Sec. 1,3,4	868.9
UTU-86610	Sweetwater	T26S	R18E	Sec. 9,10,11	777.0
UTU-86611	Sweetwater	T26S	R18E	Sec. 12,13	518.0
UTU-86612‡	Sweetwater	T25S	R19E	Sec. 21 N1/2 SE1/4,22,27,28	129.5

Table 4-2. Federal Potash Prospecting Permit Applications *(concluded)*

Serial Number	Applicant	Township (Salt Lake Meridian)	Range (Salt Lake Meridian)	Legal Description	Hectares
UTU-88855	American Potash	T25S	R17.5E	Sec. 3 and Sec. 4 as follows (described in metes and bounds): Beginning at corner No. 1, 304.8 m South (180°) to corner No. 2, then 1,609.3 m East (90°) to corner No. 3 then 402.3 m South (180°) to corner No. 4, then 804.7 m East (90°) to corner No. 5, then 804.7 m South (180°) to corner No. 6, then 402.3 m East (90°) to corner No. 7, then 1,511.8 m North (360°) to corner No. 8, then 2,816.4 m West (270°) to corner No. 1. Tie: Corner No. 1 bears 4,425.7 m West (270°) and 0 m South (180°) from the NW corner of Sec. 1, the tie corner, T25S, R17.5E	167.5
UTU-88856	American Potash	T24S	R16E	Sec. 12 NE4SE4, S2SE4; Sec. 13 NE4, NE4SE4	744.6
UTU-88856	American Potash	T24S	R17E	Sec. 19 SE4SE4; Sec. 30 NE4NE4, S2NE4, SE4; Sec. 31 E2NE4	
UTU-88856	American Potash	T25S	R17.5E	Sec. 10 SE4NE4, SE4; Sec. 13 NW4, NE4, N2SE4, SE4SE4; Sec. 14 N2NW4, N2NE4; Sec. 15 E2NW4, W2NE4, NE4NE4, W2SE4; 5ec. 24 NE4NE4	
				Total:	17,766.6

† PPA eliminated by Ten Mile KPLA expansion.
‡ PPA subdivided by KPLA expansion; original legal description listed; net acreage outside KPLA listed.

Prospecting permits entitle the permit holder to apply with the BLM for a preference right lease if a valuable deposit can be demonstrated and BLM determines that the lands are chiefly valuable for potassium. Preference right leasing allows a company invested in prospecting activities to secure mineral tenure by leasing without participating in a competitive lease sale. Leases are typically granted for 20-year terms. Maintenance of a potash lease requires payment of a minimum annual royalty of 5% of the gross value of potash produced, or US$3.00 per acre, whichever is greater.

In May 2011, American Potash signed an MOU with the BLM Utah State Office for the purpose of facilitating prospecting activities on the Property outside the pending BLM Ten Mile KPLA expansion boundary. The Ten Mile KPLA boundary was not established at the time the MOU was signed, although it was expected to encroach upon and eliminate a south-central portion of the Property.

The objective of the MOU for American Potash was to gain timely approval of the PPA's in order to conduct potash prospecting outside the proposed Ten Mile KPLA.

The objective of the MOU for the BLM was to separate approval of prospecting from leasing and establish the scope of environmental analysis required to consider approval of the PPA's. On 5 March 2012, the BLM filed a notice of intent in the Federal Register (Vol. 22, No. 43) to prepare a MLP, amendments to the RMP for the Moab and Monticello field offices, and an associated EIS. The planning area covers about 317,000 ha of public lands in San Juan and Grand Counties, including the full extent of the Property and surrounding area. The scope of the MLP is limited to new oil, gas, and potash leasing within the planning area.

The MLP process will provide additional planning and analysis prior to new leasing of oil and gas and potash within the planning area. The MLP will enable the Moab and Monticello BLM Field Offices to (1) evaluate in-field considerations such as optimal parcel configurations and potential development scenarios; (2) identify and address potential resource conflicts and environmental impacts from development; (3) develop mitigation strategies; and (4) consider a range of new constraints, including prohibiting surface occupancy or closing areas to leasing.

The outcome of the MLP process may result in new mineral leasing stipulations and development constraints accomplished through amendments to the land use plans (Moab and Monticello RMPs). The EIS will analyze likely development scenarios and land use plan alternatives with varying mitigation levels for mineral leasing.

The Proposed MLP and final EIS are forecast to be completed in summer 2014.

The BLM does not anticipate granting any leases by competitive sale or preference right until sometime after the MLP and EIS are completed. Any decision to grant potash leases, whether inside or outside the Ten Mile KPLA, will be subject to the environmental standards stipulated in the future MLP.

Under terms of the MOU, the BLM acknowledges that once prospecting activities are underway on the Property and environmental studies necessary to authorize leasing and development are completed, a decision by the BLM on leasing lands outside of the KPLA will be made in a timely manner. Should the BLM determine that leasing of potash lands for development is appropriate within the area of the American Potash PPA's, the decision will be to issue preference rights leases to American Potash.

Should the BLM ultimately decide not to lease all or part of the Property, the MOU does not preclude or diminish the rights of American Potash to pursue administrative rights to seek a decision favorable to its position.

On 4 May 2012, the BLM officially established the Ten Mile KPLA expansion, thus eliminating 8,739 ha of American Potash's PPA holdings within the new KLPA boundary. The BLM agreed to deny eight PPA's wholly contained within the KPLA boundary and to subdivide eight other PPA's partly contained within the boundary. The BLM agreed to preserve the subdivided portions of American Potash's PPA's lying outside the KPLA boundary. The affected PPA's are identified in Table 4-2. All PPA's consumed by the KPLA will be converted from preference right leasing to competitive sale. The KPLA action reduced American Potash's net PPA coverage to 17,767 ha.

As of the effective date of this Technical Report, the PPA's lying outside the Ten Mile KPLA boundary remain under BLM review and no decision of approval or denial has been rendered. As such, American Potash has yet to secure tenure to the federal potash rights on the Property.

While American Potash is well positioned, risk exists that American Potash may fail to acquire potash leases on part or all of the Property by competitive sale or preference right. Acquisition of the leases within the KPLA by competitive sale is not assured. Outside the KPLA, the path forward to potash leasing through the PPA process is uncertain because of special terms under the MOU which subject preference right leasing to the outcome of the pending 2014 MLP, the unpredictable mineral leasing stipulations, and development constraints amended to the land use plans. The scope of stipulations may or may not substantially affect leasing and/or future development of the Property.

In January 2012, the BLM publically expressed willingness to grant approval for the commencement of prospecting activities in the Paradox Basin while the MLP is being drafted. However, the BLM cautioned that the investment in prospecting activities, including exploration drilling, and successful demonstration of a valuable deposit do not guarantee that BLM will grant a potash lease, contrary to the standard entitlement process normally assured under a regular prospecting permit. The BLM could permit exploration drilling on lands that will be later deemed unleasable.

4.2.3 Federal Placer Mining Claims

On 16 June 2011, American Potash staked 160 federal placer mining claims totaling 1,295 ha staked over a portion of the federal potash PPA area, as summarized Table 4-3. The claims were located according to projected subsurface lithium brine occurrences defined in the Utah Geological and Mineralogical Survey Special Studies 13 (UGMS 1965), juxtaposed with American Potash's potash PPA areas and state potash leases. The placer claim block defines an approximately 9.6-km-long by 1.6-km-wide, northwest-southeast elongated contiguous block of claims in the north part of the Property.

The placer claims grant mineral rights to placer deposits of all locatable minerals, including lithium. Federal mining claims are codified under 43 CFR §3800, issued under the authority of sections 302 and 603 of the Federal Land Policy and Management Act of 1976 (43 USC 1732, 1733, and 1782) (U.S. Department of the Interior, et al.).

American Potash intends to evaluate the presence and composition of subsurface lithium-potash bearing brines on the claims during the course of exploration drilling for potash.

4.3 Environmental Liability

No environmental liabilities from previous industrial activities are known to exist on the Property.

Table 4-3. American Potash Federal Placer Claims

Serial Number	Claim Name	Location Date	Township (Salt Lake Meridian)	Range	Legal Description	Hectares	Annual Maintenance Fee
UMC413981	TM-1	16-Jun-11	T24S	R17E	W2NWNW Sec. 11	8.1	US$140.00
UMC413982	TM-2	16-Jun-11	T24S	R17E	E2NWNW Sec. 11	8.1	US$140.00
UMC413983	TM-3	16-Jun-11	T24S	R17E	W2NENW Sec. 11	8.1	US$140.00
UMC413984	TM-4	16-Jun-11	T24S	R17E	E2NENW Sec. 11	8.1	US$140.00
UMC413985	TM-5	16-Jun-11	T24S	R17E	W2NWNE Sec. 11	8.1	US$140.00
UMC413986	TM-6	16-Jun-11	T24S	R17E	E2NWNE Sec. 11	8.1	US$140.00
UMC413987	TM-7	16-Jun-11	T24S	R17E	W2NENE Sec. 11	8.1	US$140.00
UMC413988	TM-8	16-Jun-11	T24S	R17E	E2NENE Sec. 11	8.1	US$140.00
UMC413989	TM-9	16-Jun-11	T24S	R17E	E2SENE Sec. 11	8.1	US$140.00
UMC413990	TM-10	16-Jun-11	T24S	R17E	W2SENE Sec. 11	8.1	US$140.00
UMC413991	TM-11	16-Jun-11	T24S	R17E	E2SWNE Sec. 11	8.1	US$140.00
UMC413992	TM-12	16-Jun-11	T24S	R17E	W2SWNE Sec. 11	8.1	US$140.00
UMC413993	TM-13	16-Jun-11	T24S	R17E	E2SENW Sec. 11	8.1	US$140.00
UMC413994	TM-14	16-Jun-11	T24S	R17E	W2SENW Sec. 11	8.1	US$140.00
UMC413995	TM-15	16-Jun-11	T24S	R17E	E2SWNW Sec. 20	8.1	US$140.00
UMC413996	TM-16	16-Jun-11	T24S	R17E	W2SWNW Sec. 11	8.1	US$140.00
UMC413997	TM-17	16-Jun-11	T24S	R17E	E2NWSW Sec. 11	8.1	US$140.00
UMC413998	TM-18	16-Jun-11	T24S	R17E	W2NESW Sec. 11	8.1	US$140.00
UMC413999	TM-19	16-Jun-11	T24S	R17E	E2NESW Sec. 11	8.1	US$140.00
UMC414000	TM-20	16-Jun-11	T24S	R17E	W2NWSE Sec. 11	8.1	US$140.00
UMC414001	TM-21	16-Jun-11	T24S	R17E	E2NWSE Sec. 11	8.1	US$140.00
UMC414002	TM-22	16-Jun-11	T24S	R17E	W2NESE Sec. 11	8.1	US$140.00
UMC414003	TM-23	16-Jun-11	T24S	R17E	E2NESE Sec. 11	8.1	US$140.00
UMC414004	TM-24	16-Jun-11	T24S	R17E	W2NWNW Sec. 12	8.1	US$140.00
UMC414005	TM-25	16-Jun-11	T24S	R17E	W2SWSW Sec. 12	8.1	US$140.00
UMC414006	TM-26	16-Jun-11	T24S	R17E	E2SESE Sec. 11	8.1	US$140.00
UMC414007	TM-27	16-Jun-11	T24S	R17E	W2SESE Sec. 11	8.1	US$140.00
UMC414008	TM-28	16-Jun-11	T24S	R17E	E2SWSE Sec. 11	8.1	US$140.00
UMC414009	TM-29	16-Jun-11	T24S	R17E	W2SWSE Sec. 11	8.1	US$140.00
UMC414010	TM-30	16-Jun-11	T24S	R17E	E2SESW Sec. 11	8.1	US$140.00
UMC414011	TM-31	16-Jun-11	T24S	R17E	W2SESW Sec. 11	8.1	US$140.00
UMC414012	TM-32	16-Jun-11	T24S	R17E	E2SWSW Sec. 11	8.1	US$140.00
UMC414013	TM-33	16-Jun-11	T24S	R17E	W2NENW Sec. 14	8.1	US$140.00
UMC414014	TM-34	16-Jun-11	T24S	R17E	E2NENW Sec. 14	8.1	US$140.00
UMC414015	TM-35	16-Jun-11	T24S	R17E	W2NWNE Sec. 14	8.1	US$140.00
UMC414016	TM-36	16-Jun-11	T24S	R17E	E2NWNE Sec. 14	8.1	US$140.00
UMC414017	TM-37	16-Jun-11	T24S	R17E	W2NENE Sec. 14	8.1	US$140.00
UMC414018	TM-38	16-Jun-11	T24S	R17E	E2NENE Sec. 14	8.1	US$140.00
UMC414019	TM-39	16-Jun-11	T24S	R17E	W2NWNW Sec. 13	8.1	US$140.00
UMC414020	TM-40	16-Jun-11	T24S	R17E	E2NWNW Sec. 13	8.1	US$140.00
UMC414021	TM-41	16-Jun-11	T24S	R17E	E2SWNW Sec. 13	8.1	US$140.00
UMC414022	TM-42	16-Jun-11	T24S	R17E	W2SWNW Sec. 13	8.1	US$140.00
UMC414023	TM-43	16-Jun-11	T24S	R17E	E2SENE Sec. 14	8.1	US$140.00
UMC414024	TM-44	16-Jun-11	T24S	R17E	W2SENE Sec. 14	8.1	US$140.00
UMC414025	TM-45	16-Jun-11	T24S	R17E	E2SWNE Sec. 14	8.1	US$140.00
UMC414026	TM-46	16-Jun-11	T24S	R17E	W2SWNE Sec.14	8.1	US$140.00
UMC414027	TM-47	16-Jun-11	T24S	R17E	E2SENW Sec. 14	8.1	US$140.00
UMC414028	TM-48	16-Jun-11	T24S	R17E	W2SENW Sec. 14	8.1	US$140.00
UMC414029	TM-49	16-Jun-11	T24S	R17E	E2NESW Sec. 14	8.1	US$140.00
UMC414030	TM-50	16-Jun-11	T24S	R17E	W2NWSE Sec. 14	8.1	US$140.00
UMC414031	TM-51	16-Jun-11	T24S	R17E	E2NWSE Sec. 14	8.1	US$140.00
UMC414032	TM-52	16-Jun-11	T24S	R17E	W2NESE Sec. 14	8.1	US$140.00
UMC414033	TM-53	16-Jun-11	T24S	R17E	E2NESE Sec. 14	8.1	US$140.00
UMC414034	TM-54	16-Jun-11	T24S	R17E	W2NWSW Sec. 13	8.1	US$140.00
UMC414035	TM-55	16-Jun-11	T24S	R17E	E2NWSW Sec. 13	8.1	US$140.00
UMC414036	TM-56	16-Jun-11	T24S	R17E	W2NESW Sec. 13	8.1	US$140.00

Table 4-3. American Potash Federal Placer Claims *(continued)*

Serial Number	Claim Name	Location Date	Township (Salt Lake Meridian)	Range	Legal Description	Hectares	Annual Maintenance Fee
UMC414037	TM-57	16-Jun-11	T24S	R17E	W2SESW Sec. 13	8.1	US$140.00
UMC414038	TM-58	16-Jun-11	T24S	R17E	E2SWSW Sec. 13	8.1	US$140.00
UMC414039	TM-59	16-Jun-11	T24S	R17E	W2SWSW Sec. 13	8.1	US$140.00
UMC414040	TM-60	16-Jun-11	T24S	R17E	E2SESE Sec. 14	8.1	US$140.00
UMC414041	TM-61	16-Jun-11	T24S	R17E	W2SESE Sec. 14	8.1	US$140.00
UMC414042	TM-62	16-Jun-11	T24S	R17E	E2SWSE Sec. 14	8.1	US$140.00
UMC414043	TM-63	16-Jun-11	T24S	R17E	W2SWSE Sec. 14	8.1	US$140.00
UMC414044	TM-64	16-Jun-11	T24S	R17E	E2SESW Sec. 14	8.1	US$140.00
UMC414045	TM-65	16-Jun-11	T24S	R17E	W2NWNE Sec. 23	8.1	US$140.00
UMC414046	TM-66	16-Jun-11	T24S	R17E	E2NWNE Sec. 23	8.1	US$140.00
UMC414047	TM-67	16-Jun-11	T24S	R17E	W2NENE Sec. 23	8.1	US$140.00
UMC414048	TM-68	16-Jun-11	T24S	R17E	E2NENE Sec. 23	8.1	US$140.00
UMC414049	TM-69	16-Jun-11	T24S	R17E	W2NWNW Sec. 24	8.1	US$140.00
UMC414050	TM-70	16-Jun-11	T24S	R17E	E2NWNW Sec. 24	8.1	US$140.00
UMC414051	TM-71	16-Jun-11	T24S	R17E	W2NENW Sec. 24	8.1	US$140.00
UMC414052	TM-72	16-Jun-11	T24S	R17E	E2NENW Sec. 24	8.1	US$140.00
UMC414053	TM-73	16-Jun-11	T24S	R17E	E2SENW Sec. 24	8.1	US$140.00
UMC414054	TM-74	16-Jun-11	T24S	R17E	W2SENW Sec. 24	8.1	US$140.00
UMC414055	TM-75	16-Jun-11	T24S	R17E	E2SWNW Sec. 24	8.1	US$140.00
UMC414056	TM-76	16-Jun-11	T24S	R17E	W2SWNW Sec. 24	8.1	US$140.00
UMC414057	TM-77	16-Jun-11	T24S	R17E	E2SENE Sec. 23	8.1	US$140.00
UMC414058	TM-78	16-Jun-11	T24S	R17E	W2SENE Sec. 23	8.1	US$140.00
UMC414059	TM-79	16-Jun-11	T24S	R17E	E2SWNE Sec. 23	8.1	US$140.00
UMC414060	TM-80	16-Jun-11	T24S	R17E	W2SWNE Sec. 23	8.1	US$140.00
UMC414061	TM-81	16-Jun-11	T24S	R17E	E2NWSE Sec. 23	8.1	US$140.00
UMC414062	TM-82	16-Jun-11	T24S	R17E	W2NESE Sec. 23	8.1	US$140.00
UMC414063	TM-83	16-Jun-11	T24S	R17E	E2NESE Sec. 23	8.1	US$140.00
UMC414064	TM-84	16-Jun-11	T24S	R17E	W2NWSW Sec. 24	8.1	US$140.00
UMC414065	TM-85	16-Jun-11	T24S	R17E	E2NWSW Sec. 24	8.1	US$140.00
UMC414066	TM-86	16-Jun-11	T24S	R17E	W2NESW Sec. 24	8.1	US$140.00
UMC414067	TM-87	16-Jun-11	T24S	R17E	E2NESW Sec. 24	8.1	US$140.00
UMC414068	TM-88	16-Jun-11	T24S	R17E	W2NWSE Sec. 24	8.1	US$140.00
UMC414069	TM-89	16-Jun-11	T24S	R17E	W2SWSE Sec. 24	8.1	US$140.00
UMC414070	TM-90	16-Jun-11	T24S	R17E	E2SESW Sec. 24	8.1	US$140.00
UMC414071	TM-91	16-Jun-11	T24S	R17E	W2SESW Sec. 24	8.1	US$140.00
UMC414072	TM-92	16-Jun-11	T24S	R17E	E2SWSW Sec. 24	8.1	US$140.00
UMC414073	TM-93	16-Jun-11	T24S	R17E	W2SWSW Sec. 24	8.1	US$140.00
UMC414074	TM-94	16-Jun-11	T24S	R17E	E2SESE Sec. 23	8.1	US$140.00
UMC414075	TM-95	16-Jun-11	T24S	R17E	W2SESE Sec. 23	8.1	US$140.00
UMC414076	TM-96	16-Jun-11	T24S	R17E	E2SWSE Sec. 23	8.1	US$140.00
UMC414077	TM-97	16-Jun-11	T24S	R17E	W2NENE Sec. 26	8.1	US$140.00
UMC414078	TM-98	16-Jun-11	T24S	R17E	E2NENE Sec. 26	8.1	US$140.00
UMC414079	TM-99	16-Jun-11	T24S	R17E	W2NWNW Sec. 25	8.1	US$140.00
UMC414080	TM-100	16-Jun-11	T24S	R17E	E2NWNW Sec. 25	8.1	US$140.00
UMC414081	TM-101	16-Jun-11	T24S	R17E	W2NENW Sec. 25	8.1	US$140.00
UMC414082	TM-102	16-Jun-11	T24S	R17E	E2NENW Sec. 25	8.1	US$140.00
UMC414083	TM-103	16-Jun-11	T24S	R17E	W2NWNE Sec. 25	8.1	US$140.00
UMC414084	TM-104	16-Jun-11	T24S	R17E	E2NWNE Sec. 25	8.1	US$140.00
UMC414085	TM-105	16-Jun-11	T24S	R17E	E2SWNE Sec. 25	8.1	US$140.00
UMC414086	TM-106	16-Jun-11	T24S	R17E	W2SWNE Sec. 25	8.1	US$140.00
UMC414087	TM-107	16-Jun-11	T24S	R17E	E2SENW Sec. 25	8.1	US$140.00
UMC414088	TM-108	16-Jun-11	T24S	R17E	W2SENW Sec. 25	8.1	US$140.00
UMC414089	TM-109	16-Jun-11	T24S	R17E	E2SWNW Sec. 25	8.1	US$140.00
UMC414090	TM-110	16-Jun-11	T24S	R17E	W2SWNW Sec. 25	8.1	US$140.00
UMC414091	TM-111	16-Jun-11	T24S	R17E	E2SENE Sec. 26	8.1	US$140.00
UMC414092	TM-112	16-Jun-11	T24S	R17E	W2SENE Sec. 26	8.1	US$140.00

Table 4-3. American Potash Federal Placer Claims *(concluded)*

Serial Number	Claim Name	Location Date	Township (Salt Lake Meridian)	Range (Salt Lake Meridian)	Legal Description	Hectares	Annual Maintenance Fee
UMC414093	TM-113	16-Jun-11	T24S	R17E	E2NESE Sec. 26	8.1	US$140.00
UMC414094	TM-114	16-Jun-11	T24S	R17E	W2NWSW Sec. 25	8.1	US$140.00
UMC414095	TM-115	16-Jun-11	T24S	R17E	E2NWSW Sec. 25	8.1	US$140.00
UMC414096	TM-116	16-Jun-11	T24S	R17E	W2NESW Sec. 25	8.1	US$140.00
UMC414097	TM-117	16-Jun-11	T24S	R17E	E2NESW Sec. 25	8.1	US$140.00
UMC414098	TM-118	16-Jun-11	T24S	R17E	W2NWSE Sec. 25	8.1	US$140.00
UMC414099	TM-119	16-Jun-11	T24S	R17E	E2NWSE Sec. 25	8.1	US$140.00
UMC414100	TM-120	16-Jun-11	T24S	R17E	W2NESE Sec. 25	8.1	US$140.00
UMC414101	TM-121	16-Jun-11	T24S	R17E	E2SESE Sec. 25	8.1	US$140.00
UMC414102	TM-122	16-Jun-11	T24S	R17E	W2SESE Sec. 25	8.1	US$140.00
UMC414103	TM-123	16-Jun-11	T24S	R17E	E2SWSE Sec. 25	8.1	US$140.00
UMC414104	TM-124	16-Jun-11	T24S	R17E	W2SWSE Sec. 25	8.1	US$140.00
UMC414105	TM-125	16-Jun-11	T24S	R17E	E2SESW Sec. 25	8.1	US$140.00
UMC414106	TM-126	16-Jun-11	T24S	R17E	W2SESW Sec. 25	8.1	US$140.00
UMC414107	TM-127	16-Jun-11	T24S	R17E	E2SWSW Sec. 25	8.1	US$140.00
UMC414108	TM-128	16-Jun-11	T24S	R17E	W2SWSW Sec. 25	8.1	US$140.00
UMC414109	TM-129	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW, Sec. 2 NE	8.1	US$140.00
UMC414110	TM-130	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW	8.1	US$140.00
UMC414111	TM-131	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW	8.1	US$140.00
UMC414112	TM-132	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW	8.1	US$140.00
UMC414113	TM-133	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE NW	8.1	US$140.00
UMC414114	TM-134	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE	8.1	US$140.00
UMC414115	TM-135	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE	8.1	US$140.00
UMC414116	TM-136	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE	8.1	US$140.00
UMC414117	TM-137	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE	8.1	US$140.00
UMC414118	TM-138	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE	8.1	US$140.00
UMC414119	TM-139	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE	8.1	US$140.00
UMC414120	TM-140	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE NW	8.1	US$140.00
UMC414121	TM-141	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW	8.1	US$140.00
UMC414122	TM-142	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW	8.1	US$140.00
UMC414123	TM-143	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW	8.1	US$140.00
UMC414124	TM-144	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW, Sec. 2 NE	8.1	US$140.00
UMC414125	TM-145	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW SW, Sec. 2 NE SE	8.1	US$140.00
UMC414126	TM-146	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW SW	8.1	US$140.00
UMC414127	TM-147	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW SW	8.1	US$140.00
UMC414128	TM-148	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NW SW	8.1	US$140.00
UMC414129	TM-149	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE NW SW SE	8.1	US$140.00
UMC414130	TM-150	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE SE	8.1	US$140.00
UMC414131	TM-151	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE SE	8.1	US$140.00
UMC414132	TM-152	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 NE SE	8.1	US$140.00
UMC414133	TM-153	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SE	8.1	US$140.00
UMC414134	TM-154	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SE	8.1	US$140.00
UMC414135	TM-155	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SE	8.1	US$140.00
UMC414136	TM-156	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SW SE	8.1	US$140.00
UMC414137	TM-157	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SW	8.1	US$140.00
UMC414138	TM-158	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SW	8.1	US$140.00
UMC414139	TM-159	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SW	8.1	US$140.00
UMC414140	TM-160	16-Jun-11	T25S	R17.5E	M&B 402 m X 201 m, Sec. 1 SW, Sec. 2 SE	8.1	US$140.00
					Total:	1,295.0	US$22,400.00

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

The Property is accessed by the Blue Hill Road off of US Highway 191 at a point 23 km south of Crescent Junction (intersection of US Highway 191 and Interstate 70). Alternate access is available via numerous improved and unimproved roads from US Highway 191 and Interstate 70, including the Ruby Ranch, Ten Mile, Dubinky Well, and Mineral Canyon roads. The Canyonlands Field airport, which services Moab and the surrounding area, is located on US Highway 191 at the Blue Hills Road.

5.2 Climate

The climate is arid to semi-arid, with an average annual rainfall of 20 to 28 centimeters (cm). Through the year, the average daily high temperature ranges between 5 degrees Celsius (°C) and 37°C, and the average daily low temperature between –8°C and 17°C. The area receives approximately 300 days of sunshine annually. At Intrepid's Moab Mine, the pumping of water into the mine and evaporation ponds is only conducted for 7 months per year during the peak evaporation period. The Arches National Park Headquarters climate station reports an average pan evaporation rate of 169 cm per year and an average precipitation rate of 22 cm per year, for a net evaporation rate of 147 cm per year.

5.3 Local Resources and Infrastructure

The town of Moab is the county seat of Grand County and the principal town in the region with a population of approximately 5,500. The Property is located approximately 32 km west of Moab and is within a 50 minute drive from the center of town. Originally a uranium mining center, Moab has an experienced workforce and well established infrastructure to support exploration activities. The BLM Moab District field office is located in Moab.

Interstate 70, a major traffic corridor, connects the Property with Grand Junction (180 km) and Denver (570 km) to the west and Salt Lake City via Highway 6 to the northwest (370 km). Grand Junction, an approximate 1.5 hour drive from the Property, has a population of approximately 150,000 and is a regional support center for the oil and gas and mining industries. Extensive drilling and mining suppliers and service companies are located in Grand Junction, including majors such as Schlumberger, Halliburton, and BJ Services. Grand Junction hosts the regional airport with daily connecting flights to major hubs, including Denver, Salt Lake City, Phoenix, Dallas, and Houston.

Major oil and gas pipelines and electrical transmission lines pass through utility corridors east of the Property adjacent to Highway 191 and north of the Property adjacent to Interstate 70, and along a northwest-southeast corridor immediately northeast of the Property. Natural gas is abundant from wells and collector pipelines on and around the Property.

The Union Pacific Railroad Central Corridor mainline connects Denver and Salt Lake City and runs adjacent to the Interstate 70 corridor approximately 18 km north of the Property's north boundary. The Cane Creek Subdivision railroad spur, a common carrier line, runs from Thompson, Utah, to Intrepid's Moab Mine. The spur parallels Highway 191 approximately 16 km east of the Property's east boundary. The principal function of the spur is to service Intrepid's potash mine. In recent years, the spur has seen additional service for transporting the former Atlas uranium tailings pile from Moab to Crescent Junction under an environmental remediation program. The spur is underutilized and surplus capacity is available.

5.4 Physiography

The Property encompasses relatively flat terrain on the east side of the Green River, consisting of broad stepped mesas with low rolling hills generally ranging in elevation between 1,370 and 1,670 m, but incised below 1,200 m in southwest-draining creek gullies and along the Green River canyon. The topography is sufficiently flat to accommodate evaporation ponds on various parts of the Property.

Vegetation consists of sparse sage and black brush, clumps of native grasses, and sporadic pinion and juniper. Photographs of the Property in Figures 5-1 and 5-2 illustrate typical surface topography and vegetation.

Figure 5-1. Photograph to the Southwest along Ten Mile Point Road Accessing the Northeast Corner of the Property and Historical Quintana Fed 1-1 Well in the Distance (*taken 25 April 2012*)

Figure 5-2. Photograph to the Northwest along Spring Canyon Point Road Accessing the North Central Part of the Property (*taken 25 April 2012*)

The land supports typical desert fauna including mule deer, pronghorn, coyote, rabbit, foxes, rodents, and reptiles. The Mexican spotted owl is classified by the State of Utah as a threatened species with potential foraging, breeding, and nesting habitat throughout the Property. Species identified by the BLM to be of special concern include the burrowing owl, desert bighorn sheep, and golden eagle. Endangered fish in the Green River include the Colorado pikeminnow, humpback chub, bonytail chub, and the razorback sucker.

The Property is divided into four BLM grazing allotments, principally to support cattle. Mineral Canyon, Hell Roaring Canyon, and Spring Canyon are closed to grazing because they support desert bighorn sheep lambing and rutting areas. Barbed-wire fences and cattle guards divide the grazing areas. Occasional corrals have been built. Agricultural water is relatively scarce and supplied by springs and wind-powered well pumps throughout the area.

No Wilderness Study Areas (WSA) are located on the Property. The BLM 2008 MLP identifies the majority of the Property as "Non-WSA lands inventoried and determined to lack wilderness characteristics," with the exception of the major southwest-trending drainages and a buffer along the Green River which are designated as "Non-WSA lands inventoried and determined to have wilderness characteristics." The BLM 2008 MLP identifies the Ten Mile Wash corridor central to the Property as an "area of critical environmental concern."

6.0 HISTORY

Moab is the regional center of southeastern Utah. First settlers arrived in 1878-79, but before that Native American Indians, including the Sabuagana Utes, had long occupied the valley and used the nearby crossing of the Colorado River.

Construction of the Denver and Rio Grande Western Railroad between Denver and Salt Lake City brought the railroad to within 56 km of Moab at Thompson Springs and provided a much desired railroad connection.

By the beginning of the twentieth century, Moab had developed as one of Utah's finest fruit-growing areas, producing peaches, apples, and some grapes.

Although some mining was done along the Colorado River and in the La Sal Mountains, Moab's economy was based upon farming, ranching, and fruit growing until the uranium boom of the early 1950s brought in scores of prospectors, miners, workers and speculators, increasing the population of Moab from 1,275 in 1950 to 4,682 in 1960. During the boom, the nation's second largest uranium processing mill was completed just outside Moab in 1956, employing more than two hundred workers. The uranium boom brought new motels, cafes, stores, schools, and businesses to Moab.

In 1911, the first attempt to drill a commercial oil well between Thompson Springs and Moab was undertaken. Oil promised to enrich the Moab economy during the 1920s, but it was not until 1957 when three oil-producing fields were opened near Moab that something of an oil boom hit the area—a boom that lasted into the 1960s.

As the demand for uranium began to decrease in the early 1960s, potash became the most recent boom industry to emerge in Moab. A potash plant was built in 1963 and a railroad spur line completed from the former Denver and Rio Grande Railroad at Crescent Junction to what was then the Texasgulf Sulphur Company (Texasgulf) (today Intrepid) mill outside of Moab.

While Intrepid's potash solution mine remains active, the predominant industry at least for the last quarter century has been the tourist industry. The initial boost to tourism came with the designation of Arches National Monument in 1929. The Great Depression and World War II brought few visitors to the Moab area. After World War II, the river-running craze began slowly in the 1950s, gained momentum in the 1960s and became a staple of the region's tourist industry by the early 1970s. The establishment in 1964 of Canyonlands National Park, for which Moab serves as the northern gateway, was another milestone along the way to Moab becoming an important tourist and recreation destination. During the 1980s Moab, with its hundreds of miles of slickrock trails, gained worldwide fame as a mountain biking center.

Commercial activities in and around the Property have been limited to the exploration for and production of oil and gas. Since the mid-1950s, a total of 21 wells have been drilled on the Property and 70 more within a distance of 5 km of the outside Property boundary. These wells appear to have been largely targeting hydrocarbons in clastic horizons in Cycles 2, 4, 12, and 21 of the Paradox Formation and the disconformable surface on the top of the Mississippian Leadville Formation. The most productive hydrocarbon reservoirs in this region are hosted in vertically fractured shale of the Cane Creek horizon, within Cycle 21 of the Paradox Formation (Peterson 1989).

No wells were drilled specifically for potash exploration on the Property, although potash was observed in some holes. There has been no historical potash production from the Property.

The Paradox Basin was subject of evaluation work for the purpose of nuclear waste storage within the Paradox salts, and holes were drilled and evaluated in 1955. The Gibson Dome-1 hole was drilled and partially cored. Two holes were drilled for potash by the Delhi-Taylor Oil Company—the Cane Creek No. 1 and the Shafer No. 1—and included the upper part of the Paradox Formation (Raup and Hite 1992). The two holes are located on a non-diapiric salt anticline and provided the basis for early evaluation of potash by prominent geologist Robert Hite (1961) in the Paradox Basin beginning with the identification of the approximate 29 evaporite cycles which are numbered from youngest to oldest. Few holes have been drilled specifically for potash in recent years.

Among Hite's earliest evaluations of potash potential in the vicinity of the Property was the review of drill logs that penetrated the Cycle 13 potash horizon (Hite 1976). Hite estimated an average horizon thickness of 18 m at a conservative grade of 15% K_2O, for a potential resource of 4.74 billion tonnes of potash, equivalent to 711 Mt of K_2O. Hite used an average 60 feet (19.3m) thickness and an area of 100 suare miles (259 km^2) to make a rough estimate of resource. The estimate relied upon indirect estimates of grade and thickness from gamma ray and neutron density logs in a limited number of widely spaced holes. The Hite estimate is historical in nature and does not comply as a Mineral Resource estimate under NI 43-101. **The historical estimates are relevant only for the purpose of demonstrating a potential for potash mineralization on the Property. The QPs has not done sufficient work to classify the historical estimate as current Mineral Reserves and the historical estimates cannot be relied upon as if they were current Mineral Reserves.**

Potash exploration to date in the region has largely consisted of the compilation and correlation of downhole geophysical records. Mineralogy and gross estimate of grade may be made with a more complete suite of records, specifically gamma ray, sonic, caliper, neutron, and density logs. Most evaluation work in this regard had been done by government agencies, but recent interest in the Paradox Basin has escalated due to the rapid increase in the price of potash in recent years.

There are believed to be about a dozen companies holding mineral prospecting and/or exploration permits or applications on private, state, and federal lands in the Paradox Basin. Some of these companies have identified Exploration Targets of brines as well as the above mentioned potash beds, the former to produce various minerals including potassium, lithium, magnesium, bromine, and boron (Durgin 2011). This Technical Report does not recognize the brines as a potential target and has not researched the possibility of exploitation on the subject Property.

7.0 GEOLOGIC SETTING AND MINERALIZATION

The Paradox Basin is located in southeastern Utah and southwestern Colorado with a small portion in northeastern Arizona and the northwestern most corner of New Mexico (Figure 7-1). The La Sal, Abajo, Sleeping Ute and La Plata mountains are igneous intrusive centers, all of Tertiary age. The solid gray outline marks the maximum extent of salt within the Paradox Basin (Nuccio and Condon 1996; Raup and Hite 1982; Kelley 1958). It is an elongate, northwest-southeast trending evaporitic basin that predominately developed during the Pennsylvanian period (Desmoinesian series), about 330 to 310 million years ago (Ma). During the Pennsylvanian period, a pattern of basins and fault-bounded uplifts developed from Utah to Oklahoma as a result of the continental collision of South America, Africa, and southeastern North America (Kluth and Coney 1981; Kluth 1986), and/or from a smaller scale collision of a micro-continent with south-central North America (Harry and Mickus 1998).

The Uncompahgre Highlands in eastern Utah and western Colorado initially formed as the westernmost range of the Ancestral Rocky Mountains. The Uncompahgre Uplift is bounded along the southwestern flank by a high-angle reverse fault identified from geophysical seismic surveys and exploration drilling. The Paradox Basin formed to the southwest at the front of this fault and continued to subside during arid to semi-arid conditions. In the Pennsylvanian period, the Paradox Basin filled with thick evaporitic and marine sequences unconformably overlying the karstic Mississippian Limestone surface. These are the Pennsylvanian Hermosa Formation and the Paradox Member, the sequence composed of salts in the center portion of the Paradox Basin, changing laterally to carbonates at the basin edges and outward to terrigenous clastics.

Towards the end of the Pennsylvanian period, the Paradox Basin became flooded with non-marine arkosic material shed from the Uncompahgre and surrounding uplifted area (Hintze 1993).

In current times, the Paradox Basin is surrounded by other uplifts and basins that formed during the late-Cretaceous, early Tertiary Laramide orogeny. The Paradox Basin represents a complex combination of structure, eustasy (transgressive and regressive events), climate, and sediment supply.

The stratigraphy of interest is the Paradox Formation of the Hermosa Group (Figure 7-2). The Paradox Basin formed as a restricted shallow marine environment marked by 29 evaporite sequences as defined by Hite (1960) with facies change towards basin-edge to shallow and open water marine sediments. The limestone-dolomite-anhydrite-halite sequences are broken by siliciclastic beds marking periods of sediment influx related to glaciation (Hite 1961). The apex of the penesaline to hypersaline evaporation in a sequence may be marked by the accumulation of potassium salts. Potash is noted in 17 of the 29 cycles (Hite 1983).

The 29 evaporitic cycles have been identified and correlated largely through downhole geophysical oil and gas records. It is those potash beds that are the target in areas where they have accumulated in sufficient thickness, grade, and desired mineralogy to be economically attractive. The evaporitic cycles are persistent and are correlated over the entire length and

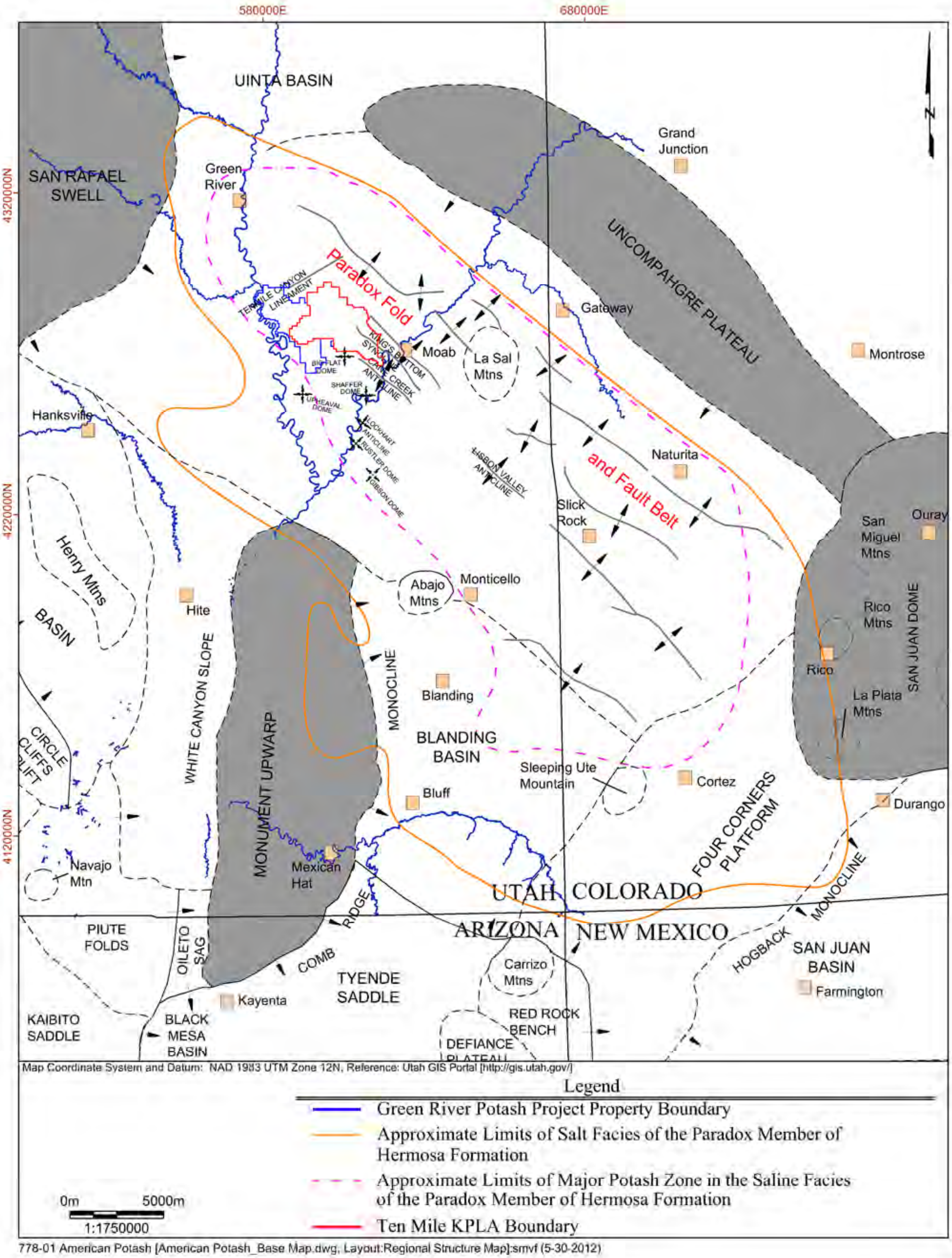


Figure 7-1. Map Illustrating the Structural Features and Highlands in and Around the Paradox Basin (after Nuccio and Condon 1996)

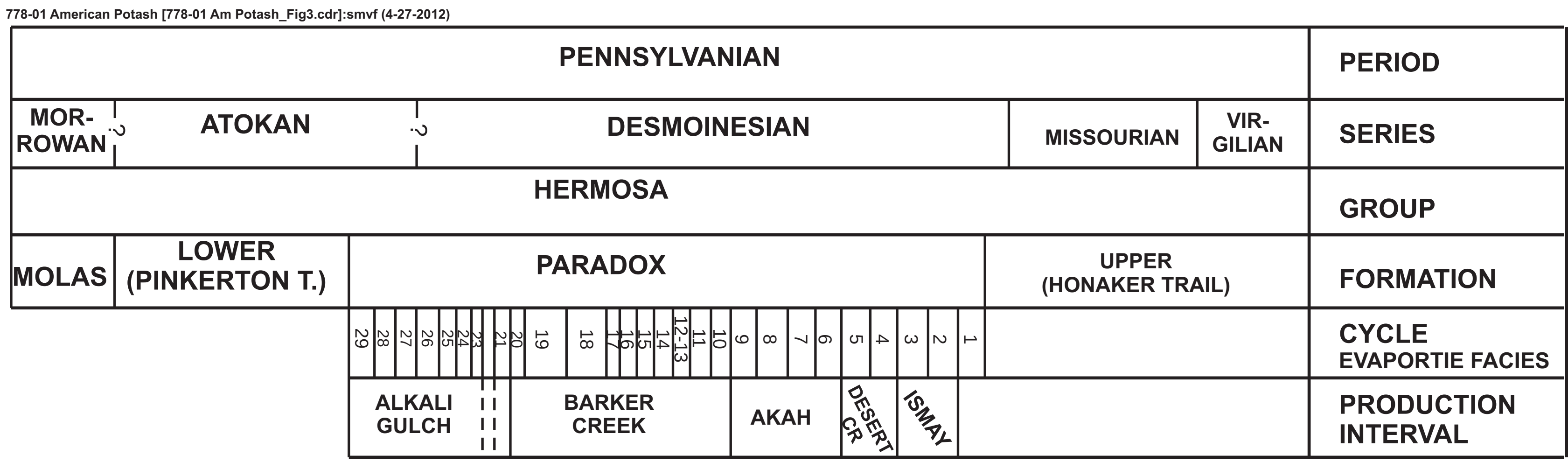


Figure 7-2. Stratigraphic Nomenclature of the Pennsylvanian Rocks of the Paradox Basin (from Hite, et al. 1984)

breadth of the Paradox Basin. The cycles may be interrupted by post-depositional faulting, folding and salt mobilization. Further, the potash cycles are also persistent across the Paradox Basin, showing variation in thickness, grade and mineralogy. Detailed analysis of the logs and regional structure is required to determine the depositional environment within the Paradox Basin and possible post-depositional structural effects that may result in mineralogical changes and mobilization of the potash.

In particular, sylvite (KCl) is considered the more desirable mineralogy as opposed to carnallite, a potassium magnesium chloride ($KCl \bullet MgCl_2 \bullet 6H_2O$) due to the higher percentages of K_2O found in the former. The mineral sylvite usually occurs with halite; the rock is called sylvinite. Potassium mineralization in the Paradox Basin is almost exclusively sylvite and carnallite, suggesting a basin depleted of sulfates. Minor kieserite, a highly unstable magnesium sulfate mineral ($MgSO_4 \cdot H_2O$), has been reported (Hite 1982). Detailed explanation of the formation and deposition of potash is presented in subsequent Sections 7.3 and 8.0.

7.1 Regional Stratigraphy

The oldest rocks in the Paradox Basin are early Proterozoic and consist of gneisses and schists intruded by Early to Middle Proterozoic plutonic igneous rocks, overlain by Middle Proterozoic (1,695-1,435 Ma) sedimentary rocks in the western part of the Basin. A younger Middle to Late Proterozoic (1,250–800 Ma) sequence of metasedimentary rocks accumulated in a convergent plate setting on the edge of the craton (Figure 7-3). Note the relationship between the Hovenweep Shale, Gothic Shale, and Desert Creek Members of the Paradox Formation relative to the larger Hermosa Group.

A wedge of clastic and carbonate Cambrian rocks unconformably overlies the basement, thickest on the west side of the study area and thinning eastward. They are from oldest to youngest the Tintic Quartzite, Ophir Formation, Maxfield Limestone, Lynch Dolomite, and Ignacio Quartzite. The Cambrian through Devonian time is dominated by platform-margin type sediments (Condon 1995).

Unconformably overlying the Cambrian are Upper Devonian rocks. In the Four Corners area, that is the basal Aneth Formation. Overlying the Aneth, probably unconformably, is the Elbert Formation, consisting of the basal McCracken Sandstone Member. Overlying the McCracken, is a shale and dolomite member known informally as the upper member and then the Ouray Limestone. An unconformity separates Devonian from Mississippian rocks in the Paradox Basin.

The Leadville Limestone and the western equivalent Redwall Limestone are uncomformably overlain by Pennsylvanian rocks in the Paradox Basin. In most areas, that is the Molas Formation which includes a basal regolith. In a few areas, the Mississippian strata are overlain by carbonate rock, the Pinkerton Trail Formation of the Hermosa Formation.

During Pennsylvanian Desmoinesian time, three main intertonguing sedimentary facies were deposited: (1) a coarse clastic facies, in places arkosic, that is thickest along the northeastern border with the Uncompahgre Uplift; (2) the evaporite facies including halite and potash, anhydrite, finely crystalline dolomite, and black organic-rich shale or shaly dolomite; and

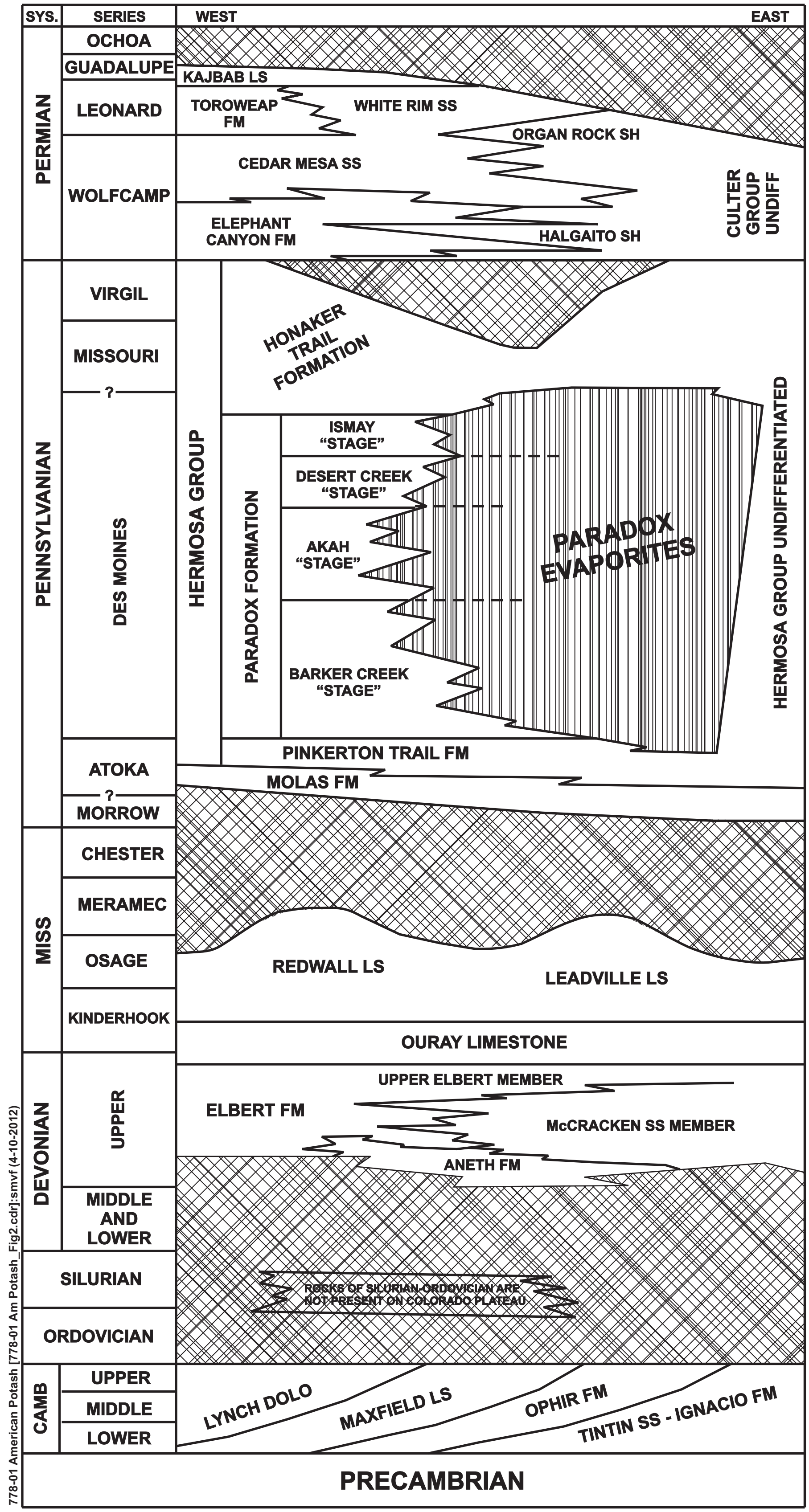


Figure 7-3. Generalized Stratigraphic Column for the Paradox Basin (from Stevenson and Baars 1986)

(3) a shelf carbonate facies, along the southern and southwestern shelf of the Paradox Basin, where the carbonate facies locally contain mound-like buildups of biogenic carbonates. A narrow belt of mound-bearing sandy to silty carbonate also is present between the clastic and evaporite facies along the western border of the San Luis uplift near the main marine accessway originating from the San Juan trough (Peterson 1989).

The Paradox Formation consists dominantly of halite rock with minor potash salts and substantially smaller amounts of anhydrite, dolomite, silty dolomite, limestone, siltstone, and shale. Hite (1960) identified 29 cycles ideally consisting of siliciclastics, carbonates, and anhydrite, overlain by a rock-salt interval with or without potash-bearing beds. Hite numbered these cycles, or salt intervals, from 1 (youngest) through 29 (oldest) (Figure 7-2). The upper boundary of the Paradox Formation is defined as the uppermost halite bed as suggested by Hite (1983). In the area of interest, that would be Cycle 2. The upper cycles may or may not be present due to non-deposition or dissolution. The salt cycles are punctuated by clastic units that are valuable correlation markers and both oil and gas Exploration Targets and source rocks. The most widespread clastic is the Akah (Hite Cycle 6), the entire Desert Creek with the Gothic and Chimney Rock Members (Hite Cycles 5 and 4) and the base of the Hovenweep Shale in the Ismay (Hite Cycle 2).

The upper Paradox Formation environment transitions from hypersaline to shallow marine conditions. It is light gray to dark gray in color, consists chiefly of fossiliferous limestones with highly variable amounts of elastics and chert and some beds of sandstone, dolomite, siltstone, and claystone. This sequence, including the overlying Honaker Trail Formation, is dominantly shallow-water marine and transitional with overlying Permian rocks.

The Permian Cutler Group rocks are variegated, generally thin bedded, calcareous siltstones, sandstones, and shales with occasional limestones. The sandstones are often crossbedded, with mica flakes concentrated along bedding planes consistent with immature detritus deposited in a nearshore marine and tidal environment. This grades to calcareous, pale-red to grayish-red sandstones and silty sandstones that are intercalated with red to purplish-red arkosic sandstones; the former were deposited in eolian and tidal environments, and the latter in fluvial channel environments (Condon 1997).

Rocks of the Triassic Moenkopi and Chinle Formations are largely mudstones, siltstones, and sandstones that continued to fill the Paradox Basin followed by the Triassic Wingate and Kayenta, the Jurassic Navaho and Entrada fluvial and eolian sandstone formations which are expressed as cliff-forming units seen on the surface in present day (Graham 2004). Faulting and differential weathering resulted in the dramatic landscapes of the Arches, Canyonlands, and Needles National Parks seen in the present day (Baars and Doelling 1987).

7.2 Regional Structure

The Paradox Basin formed at the thrust front of the Uncompahgre Uplift and is bound to the southwest by the Monument Upwarp and the Defiance Uplift, and to the northwest by the San Rafael Swell (Figure 7-1). The deepest part of the Basin (thickest evaporites and sediments) is at the front, and the depocenter migrated from the northwest to southeast during the Pennsylvanian period.

Two major intersecting lineament systems originated 1,700 Ma (Precambrian): (1) the northwest-trending Olympic-Wichita lineament (Figure 7-4) (Baars and Stevenson 1981; Baars 1976), likely a right-lateral strike slip displacement and (2) the northeast-trending Colorado lineament (Warner 1978), displacing the basement left laterally. Rejuvenation of the former in the Paradox Basin was during Cambrian, Devonian, and Mississippian times (Baars 1966; Baars and Sees 1968). During Late Mississippian time, the entire carbonate platform in southeastern Utah and southwestern Colorado was subjected to subaerial erosion, resulting in formation of a lateritic regolith (Welsh and Bissell 1979), solution breccias, and karstified surfaces in the Leadville Limestone (Fouret 1996).

It is likely that basement faulting was active only in the lower cycles of the Paradox Basin and the cycles above 18 were deposited largely in a quieter restricted basin. Further, it is suggested that the Uncompahgre may have been below sea level during most of Early and Middle Desmonian time; hence, the extreme lateral continuity of the evaporite beds and the absence of heavy sediment influx until formation of the Cutler (Trudgill and Arbuckle 2009). It is likely that lesser amounts of sediment were sourced from the south from the San Luis Uplift and from the southeast, the Silverton Delta, coincident with the San Juan Trough marine accessway representing a break in the Paradox Basin (Peterson 1989).

The Paradox Basin is surrounded by other uplifts and basins, which formed during the Late Cretaceous, Early Tertiary Laramide orogeny (Figure 7-1). The northwest-southeast trending Paradox fold and fault belt is in the northeast portion of the Basin and was created during the Tertiary and Quaternary periods by a combination of (1) reactivation of basement normal faults; (2) salt flowage, dissolution and collapse; and (3) regional uplift (Doelling 2000).

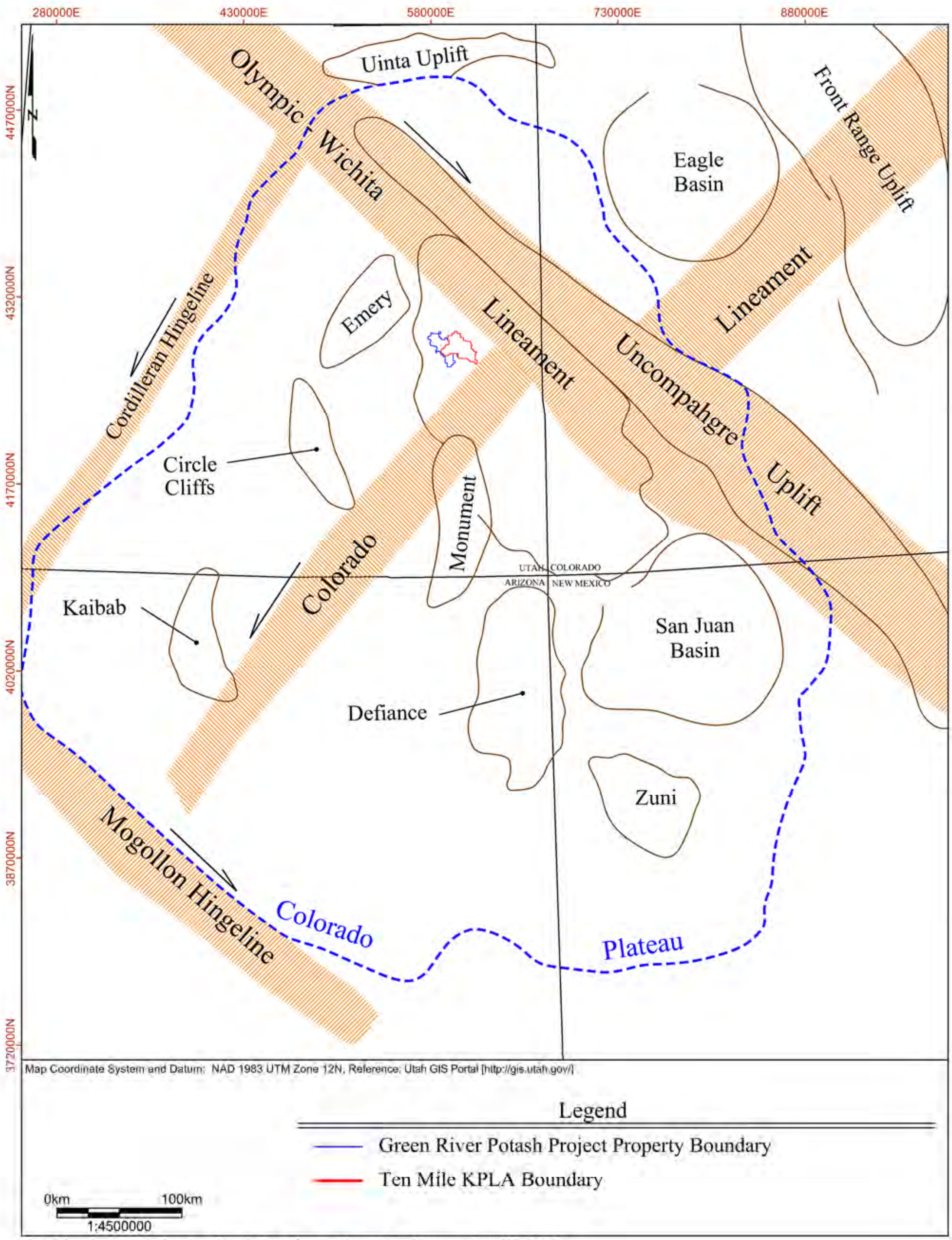
7.3 Property Geology

7.3.1 Stratigraphy

The uppermost salt bed seen in the reviewed wells is Salt 2, the lowermost is 29. Cycle 29 is seen in the central part of the Property in Ten Mile 1-26 and Federal 1-27U, defining an early depocenter. Generally, Cycles 23 through 21 represent the basal units of the Property. Initial deposition of the evaporites was in the northern part of the Paradox Basin near the thrust front and migrated to the west and south. By Cycle 19 through Cycle 13, the Basin had wide extent, followed by regression in Cycles 9 and 10. Cycles 9 through 6 showed the maximum expansion of the Basin (Hite 1970). In the area of interest, the early cycles were formed on the irregular Mississippian surface, in some cases on the Molas or Pinkerton Trail Formations; in others, directly on the Leadville Dolomite.

7.3.2 Structure

The Property of interest is in the northern part of the Paradox Basin at the edge of the northwest-southeast trending Fold and Fault Belt. The area likely shows influence of the northernmost extent of the Cane Creek Anticline on and near the western and southern part of the Property and the Kings Bottom Syncline to the west and northwest of the Property (Figure 7-5). Strike is approximately east-west to east-northeast–west-northwest and dips gently at a grade of about 4% to the north and northeast. The Big Flat dome represents the structural high on the



778-01 American Potash [American Potash_Base Map.dwg, Layout: Reg Lineaments]:smvl (5-30-2012)

Figure 7-4. Map Showing Location of Colorado Plateau and Relationship to Orthogonal Set of Lineaments (after Baars and Stevenson 1981)

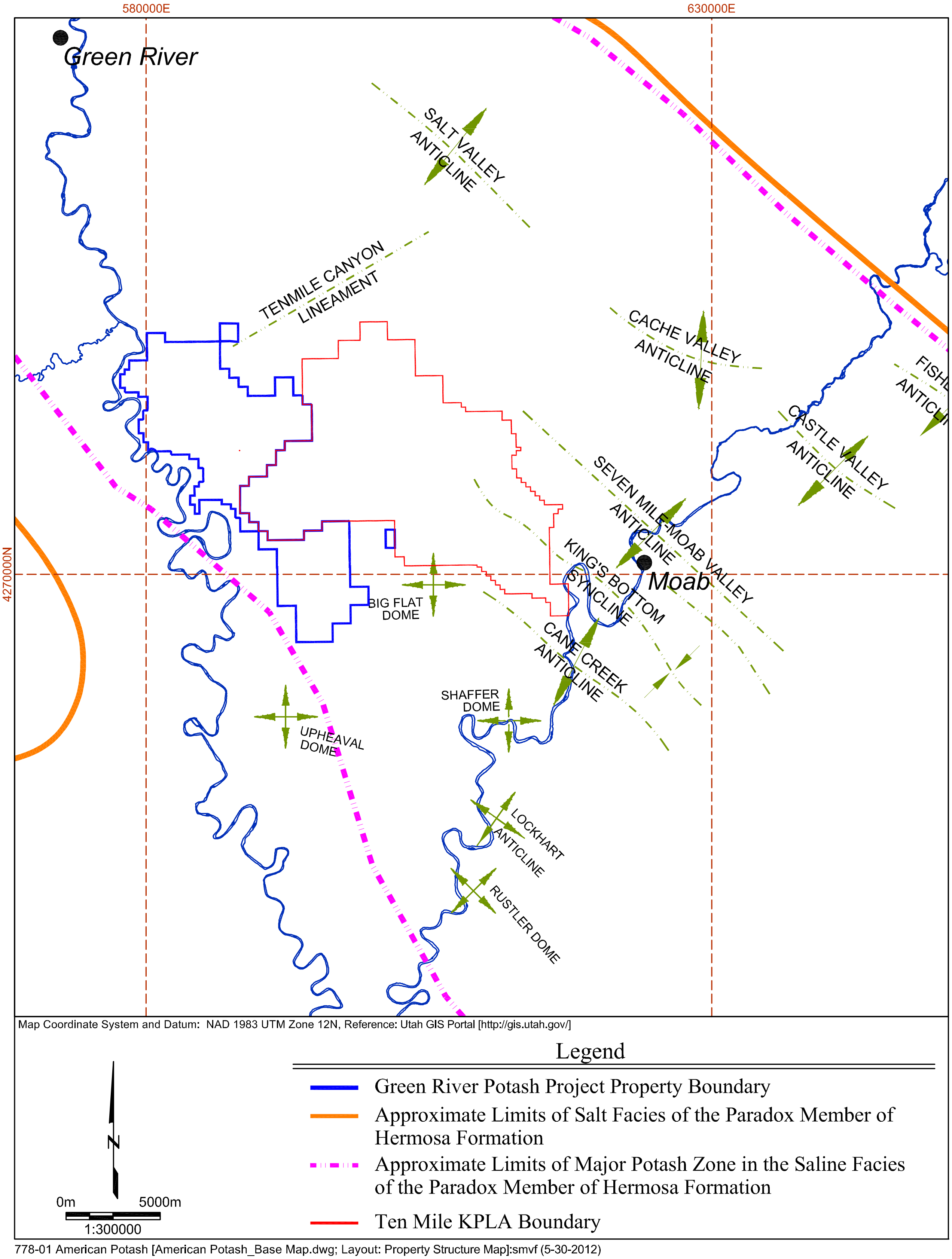


Figure 7-5. Map Showing Structure of Property Area (from Condon 1997, p. C6)

Property. Figure 7-4 indicates a northeast-southwest lineament at Tenmile Canyon that runs perpendicular to most structural features seen in the Fold and Fault Belt. It was identified in a regional gravity study and likely represents a basement left lateral compressional feature (Hildenbrand and Kucks 1983).

7.3.3 Mineralization

Potash is used to describe any number of potassium salts. By and large the predominant economic potash is sylvite, a KCl usually found mixed with salt to form the rock sylvinite which may have a K_2O content of up to 62% in its purest form. Carnallite, a potassium magnesium chloride ($KCl{\bullet}MgCl_2{\bullet}6H_2O$), is also abundant, but has K_2O content only as high as 17%. "Carnallite" defines the mineral and the rock interchangeably, although carnallitite is the more correct terminology for the carnallite and halite mixture. Besides being a lower grade potassium source, carnallite represents a more complex path of production, so is less economically attractive.

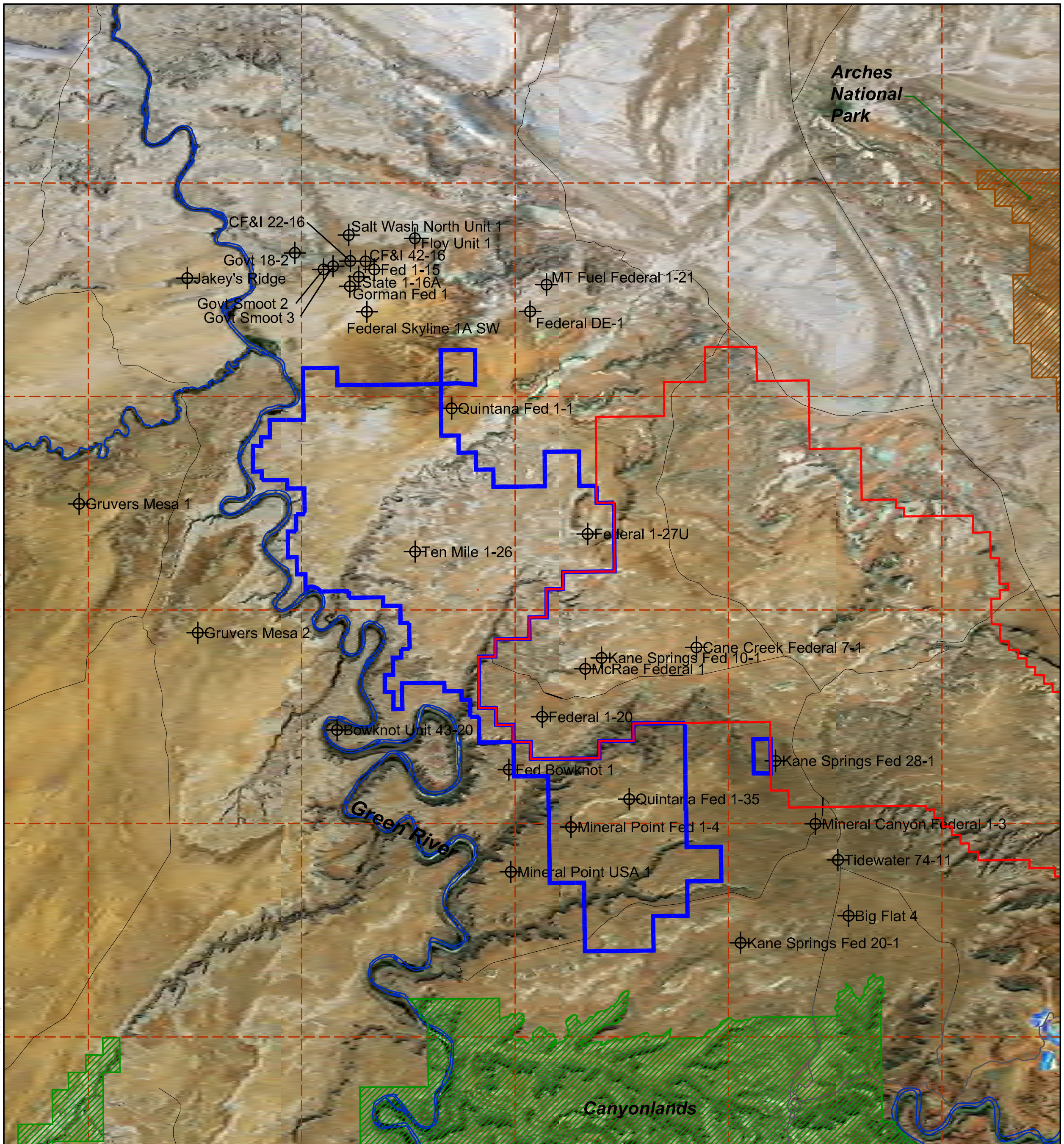
Potash, in the form of sylvinite and carnallite, forms in 17 of the 29 evaporite cycles (Hite 1960) and is marked by increased salinity as defined by bromine distribution near or at the top of the halite beds. Potash mineralization is indicative of extreme brine salinities, resulting from the extreme aridity in the final stages of the particular cycles (Raup and Hite 1992). In the subject Property's previous Technical Report, Allen (2009) identified Cycle 13 as the formation of interest, resulting from review of Hite's USGS Open-File Report 76-755 (1976).

A review of 33 historical oil and gas drill holes (Figure 7-6) has identified mineralization in potash beds 5, 13, 9, and 18. In the subject Property's previous Technical Report, Allen (2009) identified Cycle 13 as the formation of interest, resulting from review of Hite's USGS Open-File Report 76-755 (1976). Potash 5 is identified to be the most prospective.

On the Property, Cycles 5, 13, and 18 mineralization appears to mostly be sylvinite, although Cycle 13 shows some instances of sylvinite over carnallite. Potash 19 has been noted to be mineralized in the northern portion of the Paradox Basin, specifically near Crescent Junction; however, mineralization is usually carnallitic.

The mineralization in Potash 5 is largely sylvinite, but a few holes north of it are interpreted to be sylvinite mixed with carnallite. Potash 5 is found at depths from 1,336 to 1,827 m in wells on the Property at thicknesses of 1.2 to 3.4 m. In wells in areas adjacent to the Property, depths are as great as 2,066 m to the northeast. Overall, Potash 5 shows regional post-depositional dip from highs of a 300-m elevation to lows of –450 m in the northeast. Thickness is greatest along the axis of the Property, reaching an estimated 5.2 m in Kane Springs Fed 10-1 (see Figure 7-6). In some cases, the sylvinite appears to be just below Clastic 4 with no intermediate salt bed, which is a little unusual and suggests a rapid sediment influx that terminated potash precipitation rather than a more gradual transgressive event to a more open marine environment.

Potash 9 showed no appreciable mineralization in the wells examined in the subject area. The potash is not persistent in this cycle, appearing only in some wells with thicknesses ranging from 0.9 to 16.5 m, with very low estimated grades.



Map Coordinate System and Datum: NAD 1983 UTM Zone 12N, Reference: Utah GIS Portal [http://gis.utah.gov/]
Image from: Google Earth Pro 6.2.1.6014 (beta)

Legend

- Green River Potash Project Property Boundary (blue line)
- Ten Mile KPLA Boundary (red line)

N

0m 5000m
1:300000

778-01 American Potash [American Potash_Base Map.dwg; Layout: Drill Hole Map]:smvf (5-30-2012)

Figure 7-6. Map Showing Drill Hole Locations on or Near the Property

Potash 13 in the Property area is present, but low grade and usually in multiple beds separated by lower grade material, salts, or anhydrite. The thickness of Potash 13 in the assessed holes ranges from 1.1 to 9.1 m. The thicker intervals are interpreted to be carnallite.

Potash 16 occurs north of the Property and appears of sufficient thickness and grade to warrant exploration.

Potash 18 is interpreted to be sylvinite of moderate to low grade and is seen in the center part of the Property and extends eastward into the Ten Mile KPLA. In many cases, it is not present or of very low grade. Where present, only Potash 18 Upper is found. In reviewed wells, Potash 18 is found at depths from 1,640 to 2,590 m, mimicking the post-depositional structure seen in Potash 5. The thickness of the potash, where present, is 1.4 to 8.7 m; the latter is in Federal 1-27U (see Figure 7-6), but it is of very low grade.

8.0 DEPOSIT TYPES

The depositional environment of the Paradox Basin is that of a restricted marine basin, influenced by eustasy, sea floor subsidence, and/or uplift and sediment input. The Basin has been variably described as a reflux (Hite 1970) and a drawdown basin. It is likely a combination of both. Reflux represents a basin isolated from open marine conditions by a shallow bar thereby restricting inflow, increasing density, and increasing salinity. Drawdown is simple evaporation in an isolated basin resulting in brine concentration and precipitation. This is the classic "bulls-eye" model (Garrett 1995).

In that classic model, a basin that is cut off from open marine conditions will experience drawdown by evaporation in an arid to semi-arid environment. In the absence of sediment influx, precipitation will proceed from limestone to dolomite to gypsum and anhydrite to halite. Depending on the composition and influences of the brine at that time, the remaining potassium, magnesium, sulfates, and chlorides will progress from potassium and magnesium sulfates to sylvite and then carnallite. As each cycle, in theory, represents a complete regressive and transgressive event, the ideal cycle in the vertical orientation would be a mirror of this with the peak of evaporation represented by halite and potash sandwiched in the center of a cycle. In the Paradox Basin, siliciclastic units have variedly been interpreted as a flood event in a deeper part of the basin at the base of a cycle, or a sediment influx to break at the top of evaporation cycle. These cycles are seen as silty dolomite, anhydrites, halite, and black shale suggesting the influence of a reflux basin. The vertical component represented by elogs and core is actually a broader area of accommodation within the Basin; one that may be influenced by location in the medial or distal part of the Basin and/or proximity to structure and/or sediment source. In this context, the evaporites will have contemporaneous formation of anhydrite and carbonates towards the basin edge.

The formation of sylvite and carnallite are proposed as being primary and secondary. The precipitation of potash will be influenced by brine chemistry, i.e. availability of potassium, magnesium, sulfates and chlorides (Williams-Stroud 1994). It is thought that the mechanism of seawater evaporation is not enough to provide the concentration and suite of potash minerals found here, but the brine may be influenced by subsurface percolation of brines from the Mississippian carbonates and/or meteoric runoff (Stewart 1963).

The formation of dolomite and limestone may not be necessary as precipitates, but may be introduced as sediment sourced or enriched from subaerially exposed carbonates on the basin edge eroding into the basin. It is likely that gypsum formed as a primary mineralogy on broad shallow shelves and was later altered to anhydrite under conditions of increased salinity and pressure (burial) (Stewart 1963), although anhydrite as primary nodules is seen in core. Further, some of the siliciclastic units may be carbonaceous shale, which could be interpreted as back-basin type sediment in a reducing environment. A reducing environment is also caused by hypersaline conditions in the basin allowing for no decay or oxidation of the organics (Peterson 1966).

Sediment influx into the Paradox Basin is attributed to flood events, both seasonal and related to glacial cycles. In this model, an increase of ice volume would result in a lowering of sea level, isolating the basin from open marine waters, thereby increasing salinities. Conversely, a retreat of glaciers would cause a rise in sea level, allowing marine waters to flood and circulate within the Paradox Basin. The fresher water would cause some dissolution of the most soluble minerals, creating a solution disconformity (Hite 1976). During this time of higher sea level, the clastic intervals would have been deposited. Alternatively, the clastic units have been timed to maximum glacial cycles and high ice loading rather than periods of glacial decline (Williams-Stroud 1994). The former carries fine grained sediment without large amounts of freshening water that would preserve the maximum salinity events seen at the top of the cycles.

It is known that calcium enrichment will lead to precipitation of sylvite, by way of sulfate depletion to gypsum ($CaSO_4 \bullet 2H_2O$) and anhydrite ($CaSO_4$). Dolitimization will result in calcium enrichment by reducing the availability of magnesium for the formation of carnallite. Alternatively, exposure and erosion of dolomite and introduction into the Paradox Basin could cause magnesium enrichment resulting in carnallite precipitation. It has also been proposed that the clastic units may act as a magnesium sink in the clay structures, also resulting in calcium enrichment (Williams-Stroud 1994).

In the simplest and most direct methodology, exploration would try to identify areas of likely sylvinite formation in the Paradox Basin where the salts were the thickest, magnesium is depleted, calcium is enriched, and cycles appear complete in areas of the Basin where reflux and drawdown are maximized. This methodology excludes the post-depositional action of the salts which can be incredibly mobile and are further influenced by later structure and sediment loading, the latter attributed to the Cutler Formation (Trudgill and Arbuckle 2009).

9.0 EXPLORATION

Sample descriptions and well log data from oil/gas wells are available from the Utah Division of Oil, Gas and Mining (UDOGM) website (2012). Trudgill and Arbuckle (2009) produced isopach maps of all the evaporite sequences in the Paradox Basin based on those records.

Thirty-three well records have been acquired in and around the subject Property and scanned to obtain a digital record (Table 9-1).

9.1 Seismic

In 2011, American Potash commissioned John F. Arestad, Ph.D., ExplorTech LLC, of Denver, Colorado, to license, process, and interpret four 2D seismic reflection lines (profiles) covering the northwest part of the Property surrounding Shell Quintana Fed 1-1 (Figure 9-1) (Arestad 2011). Key stratigraphic horizons were picked by him and mapped across the Property, including tops for Cycles 5, 13, and 18.

From those interpreted lines, a time structure map of the top of the Paradox Formation salt was constructed by ExplorTech LLC (Figure 9-2). The map indicates a structural high, likely the Big Flat Dome (Figure 7-1), in the south dipping on a fairly regular slope to the north (Figure 9-2). This conforms to the regional interpretation from modeling of an overall dip of about 4%.

No major faulting, collapses, or diapirism were observed. Minor faulting is identified in the lowermost part of the target Paradox evaporite sequence, while the uppermost part of the evaporite interval, including Cycle 5, showed no interpretable faulting. Faulting extending as high as Cycle 13 is apparent to the southwest.

ExplorTech suggests that salt within the evaporite sequence may have moved as a result of plastic deformation, as evidenced by the “hummocky” appearance of the salt beds in the seismic profiles. ExplorTech notes that such movement, if present, could have implications for solution mining. The interpretation of evaporites from seismic lines can be problematic. Petroleum industry sourced and brokered lines may have been targeting formations hundreds or even thousands of feet below the salts. It is well known that sylvinite is difficult to detect within salt cycles due to little variability of density. The reprocessing and interpretation of these lines is specialized work and may require expertise specific to the Paradox Basin. That said, geologic modeling based on tops picked from existing oil and gas wells supports the interpretation of a gentle regional dip in the cycles of interest. The selection of tops on formations of regional extent such at the Leadville, Hermosa or Chinle is regarded as straightforward.

Table 9-1. Reviewed Well Records

Hole Name	Coordinates		
	Easting (m)	Northing (m)	Elevation (KB-ft)
Salt Wash North Unit 1	582207.00	4297566.00	4,463.0
Floy Unit 1	585303.00	4297413.00	4,298.0
Govt 18-2	579679.00	4296730.00	4,202.0
CF&I 22-16	582276.00	4296350.00	4,490.0
CF&I 42-16	582992.00	4296329.00	4,538.0
Govt Smoot 3	581472.00	4296105.00	4,339.0
Govt Smoot 2	581021.00	4295952.00	4,299.0
Fed 1-15	583396.00	4295950.00	4,295.0
State 1-16A	582674.00	4295610.00	4,418.0
Jakey's Ridge	574634.32	4295547.26	4,067.0
MT Fuel Federal 1-21	591474.00	4295244.00	4,525.0
Gorman Fed 1	582261.00	4295161.00	4,308.0
Federal DE-1	590705.00	4293983.00	4,544.0
Federal Skyline 1A SW	583056.42	4293969.18	4,138.0
Quintana Fed 1-1	587024.45	4289446.16	4,479.0
Gruvers Mesa 1	569563.32	4284974.30	4,773.8
Federal 1-27U	**593400.46**	**4283563.14**	**5,053.4**
Ten Mile 1-26	**585313.45**	**4282735.18**	**4,652.0**
Gruvers Mesa 2	575128.39	4278937.26	4,751.0
Cane Creek Federal 7-1	598495.00	4278249.00	5,180.0
Kane Springs Fed 10-1	594054.47	4277760.15	5,297.0
McRae Federal 1	593287.00	4277250.00	5,257.0
Federal 1-20	591266.48	4274999.16	5,142.0
Bowknot Unit 43-20	581655.44	4274382.22	4,621.0
Kane Springs Fed 28-1	602208.00	4272935.00	5,602.0
Fed Bowknot 1	589711.48	4272525.17	5,170.0
Quintana Fed 1-35	**595345.49**	**4271144.15**	**5,488.0**
Mineral Canyon Federal 1-3	604072.51	4269985.13	5,875.0
Mineral Point Fed 1-4	**592625.00**	**4269836.00**	**5,302.0**
Tidewater 74-11	605134.00	4268293.00	6,151.0
Mineral Point USA 1	589804.49	4267733.18	5,072.0
Big Flat 4	605628.00	4265682.00	6,017.0
Kane Springs Fed 20-1	600569.52	4264409.16	5,658.0

Bold typeface indicates wells on Property.

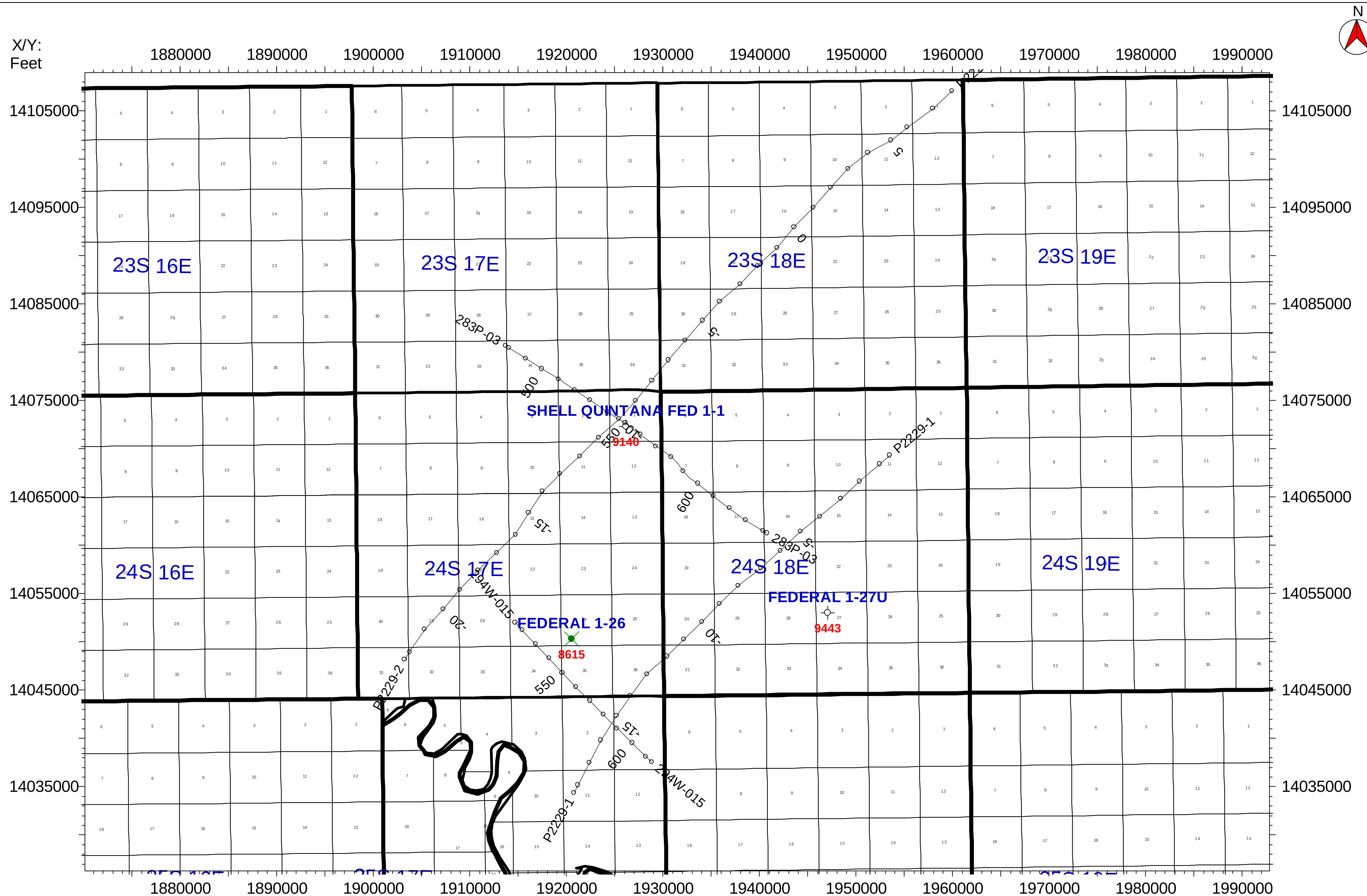


Figure 9-1. Seismic Line Location Map

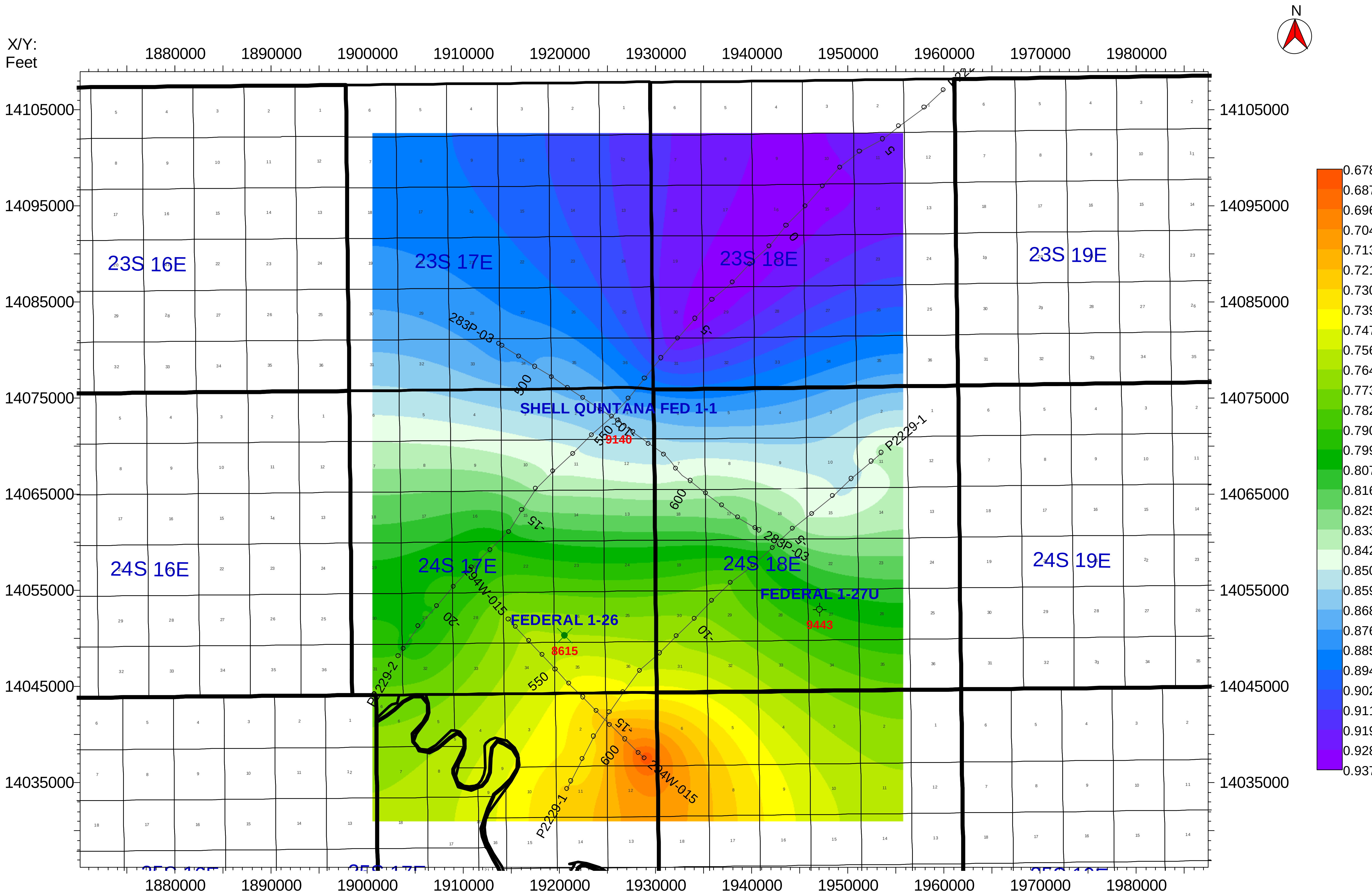


Figure 9-2. Time Structure Map on Top of Paradox Salt

10.0 DRILLING

The Property is an early stage exploration property that has never been drilled for potash. Exploration core drilling for potash was conducted in the 1970s and early 1980s by Buttes Resource Company (Buttes) on what is today Reunion Potash Company's (Reunion) Ten Mile property, which borders the GRPP Property to the east. Reunion advanced the Ten Mile project through a preliminary economic assessment based on favorable discoveries of sylvinite. Details of Reunion's potash resource remain proprietary.

While no potash drilling has been conducted on the Property, the Property and surrounding area have been the focus of hydrocarbon exploration since the early 1950s. Numerous oil and gas wells blanket the area. Hydrocarbon targets include various clastic horizons in the Paradox Formation and the underlying Mississippian Leadville dolomite.

A total of four wells have been drilled on the Property and a total of 33 regional wells have been reviewed (Figure 10-1). Holes were drilled vertically with conventional rotary equipment and typically staged down in diameter from 35 cm at the surface to 20 cm at the bottom. The majority of holes penetrated the potash beds of interest. Wireline elogs are publically available for most wells through the UDOGM website (2012). The log suites vary by hole and typically include some combination of lithology, caliper, gamma ray, neutron density, neutron, resistivity, and sonic logs.

The basis for exploration work completed to date has been evaluation of oil and gas records to determine the presence of potash as well as literature research. Oil and gas records are submitted and stored with the UDOGM and are made available for public use after a period of 2 years. Those records include downhole geophysical and drilling records. Potash, as well as salt and clastics, can be located and defined through the use of the elog suites. Gamma ray logs provide the principal information used in the location, identification, and evaluation of potash. Neutron, sonic and density logs, in various combinations, can augment the analysis.

The Exploration Target developed in this Technical Report is based on the analysis and interpretation of the historical oil and gas well elogs available in the public domain. In 2011, the Utah Geological Survey (UGS) compiled a digital database of salt cycle correlations based on elogs from 174 wells covering the Paradox Basin in Utah (Massoth and Tripp 2011). The UGS followed the same industry-standard principles of log interpretation used in the development of the Exploration Target estimate in this Technical Report. While potash occurrences were noted in various wells, the UGS study did not quantify the thicknesses and grades of the potash beds.

10.1 Electrical Logs for Potash Definition

Downhole gamma ray logs in combination with sonic, neutron, density, and caliper logs may be used to identify the presence of potash. Naturally occurring radioactivity in the form of the ^{40}K isotope derived from the potassium in the potash beds give a characteristic signature that is used to correlate the different cycles as well as estimate grade. The correlation between

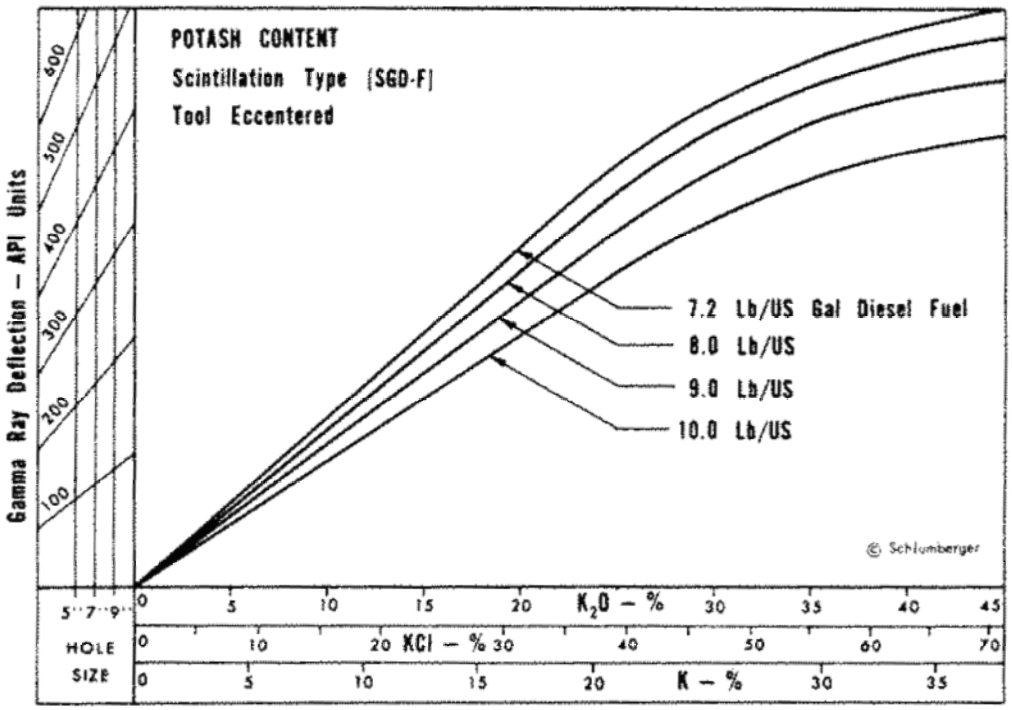


Figure 10-1. Empirical Chart Relating Gamma Ray Deflection to Potassium Content (after Schlumberger 1991; best available image)

gamma ray response and potassium content was chiefly advanced by Schlumberger, beginning in the 1960s with the interpretation of elogs in the Prairie Evaporite Formation in Saskatchewan. E. R. Crain, a Schlumberger geophysicist, furthered this work and related log response to apparent K_2O content, the customary unit of the potash industry. The established methodology developed by Schlumberger calculates K_2O% combining gamma ray American Petroleum Institute (API) units and correcting to hole diameter (from caliper logs) and mud weight (Figure 10-1). Used in combination with the other logs, mineralogy may be determined. Experience has shown good agreement between the estimation when compared with assay, but cannot be considered certifiable in a resource assessment. We refer here to an eK_2O%, an estimated rather than an assayed grade.

Elogs may be influenced by any number of factors including rock type influences, initial calibration, logging speed, temperature, borehole fluid type, and mud weight.

Caliper logging provides an indication of wash-out which may indicate the presence of very soluble minerals, i.e. sylvinite or carnallite. A gamma reading in a washed out zone may be attenuated due to the increased hole diameter. A more complex combined mineralogy may give responses resulting in misinterpretation.

Borehole Compensated Sonic is in current use and helps to eliminate effects of hole size change. The formation density log measures electron density, which is closely related to true bulk density and is expressed in modern wells as ρu, density units in grams per cubic centimeter (g/cc). It is influenced by rock matrix density, porosity, and pore fluid density. They must be run in an uncased hole.

Neutron logs are generally used in the oil industry to define and determine zones of porosity by responding to the amount of formation hydrogen present. It is expressed as "effective porosity," the porosity which contains fluids. Neutron logs may be used with more than one type of porosity log (%) for greater accuracy in determining lithology. Historical logs are in API units (counts per second) and are calibrated to limestone or sandstone in a "clean" environment with oil- or water-filled pores (Schlumberger 1968).

Typical readings of log responses for evaporite minerals are shown in Table 10-1.

Table 10-1. Geophysical Values for Evaporite Minerals (after Schlumberger 1991)

Mineral	Composition	Specific Gravity (g/cc)	Log Density (g/cc)	Sonic (msec/ft)	Neutron (θN)	GNT (θN)	Gamma (API)	K_20 (%)
Anhydrite	$CaSO_4$	2.96	3.0	50	0	0	0	0
Carnallite	$KCl \cdot MgCl_2 \cdot 6H_2O$	1.61	1.6	78	65	65	200	17
Gypsum	$CaSO_4 \cdot 2H_2O$	2.32	2.4	52	49		0	0
Halite	NaCl	2.17	2.0	67	0		0	0
Kainite	$MgSO_4 \cdot KCl \cdot 3H_2O$	2.13	1.1		45		225	18.9
Langbeinite	$K_2SO_4 \cdot 2MgO_4$	2.83	2.8	52	0		275	22.6
Polyhalite	$K2SO_4 \cdot MgSO_4 \cdot 2CaSO_4 \cdot 2H_2O$	2.78	2.8	57.5	15		180	15.5
Sylvite	KCl	1.98	1.9	74	0		500	63
Calcite	$CaCO_3$	2.71	2.7	47.5	0		0	0
Dolomite	$CaMg(CaO_3)_2$	2.87	2.9	43.5	4		0	0
Limestone		2.54	2.5	62	10		5–10	0
Dolomite		2.68	2.7	58	13.5		10–20	0
Shale			2.2–2.8	70–150	25–60		80–140	0

Notes:
msec/ft = millisecond per foot
θN = apparent limestone porosity from a neutron log
GNT = gamma ray/neutron tool
API = American Petroleum Institute

10.2 Potash Picks from Electric Logs

The suites of geophysical logs for the wells used in the interpretation are found in Table 10-2. Thirty-three holes were evaluated (Figure 7-4). Of those 33, four are located on the Property and shown in bold in the following tables.

Table 10-2. List of Drill Holes and Elogs Used for Interpretation

Hole Name	Elogs Available/Analyzed										
	Gamma Ray	Caliper	Sonic	NPHI (CNL)	DRHO	DPHI	Density (RHOB)	Porosity	Neutron	Resistivity	Spontaneous Potential
Salt Wash North Unit 1	x	x		x	x		x				
Floy Unit 1	x	x	x								
Govt 18-2	x	x	x	x	x		x				
CF&I 22-16	x	x	x								
CF&I 42-16	x	x	x								
Govt Smoot 3	x	x	x								
Govt Smoot 2	x	x	x								
Fed 1-15	x	x		x	x		x				
State 1-16A	x	x		x	x		x				
Jakey's Ridge	x	x	x							x	
Mt Fuel Federal 1-21	x	x	x								
Gorman Fed 1	x	x	x	x	x		x				
Federal DE-1	x	x	x								
Federal Skyline 1A SW	x	x		x	x		x				
Quintana Fed 1-1	x	x	x		x		x				
Gruvers Mesa 1	x	x							x	x	x
Federal 1-27U	**x**	**x**	**x**					**x**			
Ten Mile 1-26	**x**	**x**		**x**	**x**		**x**				
Gruvers Mesa 2	x	x							x		x
Cane Creek Federal 7-1	x		x								x
Kane Springs Fed 10-1	x		x								
McRae Federal 1	x			x							
Federal 1-20	x	x	x		x		x				
Bowknot Unit 43-20	x	x	x						x	x	
Kane Springs Fed 28-1	x	x	x					x			
Fed Bowknot 1	x								x		
Quintana Fed 1-35	**x**	**x**	**x**		**x**		**x**				
Mineral Canyon Federal 1-3	x	x	x	x		x					
Mineral Point Fed 1-4	**x**	**x**	**x**								
Tidewater 74-11	x			x							
Mineral Point USA 1	x	x							x	x	x
Big Flat 4	x	x	x						x		
Kane Springs Fed 20-1	x	x	x								

Dt = change in time; NPHI = neutron porosity; CNL = compensated neutron log; RHOB = bulk density from a lith-density or formation compensated density log; DRHO = density correction; DPHI = corrected density; **bold typeface indicates wells on Property.**

10.2.1 Cycle 5

Cycle 5 has the most prospective potash zone on the Property; grades are moderate (Table 10-3). The best intersection of grade and thickness centers on Shell Quintana Fed 1-1 with a composited 15.2% eK_2O and a composited thickness of 5.9 m. Quintana Fed 1-1 is just outside the western boundary in the northern part of the Property. Ten Mile 1-26 with a composited 16.4% eK_2O and an 3.4-m thickness is in the central part of the property.

Potash 5 has peak grades over 22.1% K_2O and composited grades of 12.7% to 15.9% K_2O in four holes in the central and western part of the Property, where this area trends basinward and towards the syncline. The cluster of holes near the zero elevation mark have grades that increase from 12.7% to 15.9% eK_2O, from Federal 1-20 to Cane Creek Federal 7-1 to Kane Springs Fed 10-1. McRae Federal-1 has no scale on the log to estimate grade but appears to be similar in thickness and amplitude to the neighboring Fed-1. The potash bed thickness for the same holes is 2.9 m to 5.2 m, correlating to increasing grade. There is no correlation of grade to overall Cycle 5 salt bed thickness (Figure 10-2).

The mineralization in Potash 5 on the wells located on the Property is sylvinite. Carnallite mixed with sylvinite is interpreted in a few holes north of the Property, specifically CF&I 22-16, CF&I 42-16, Govt. Smoot-2 and Mt. Fuel Federal 1-21. Notably, these holes show greater thicknesses of interpreted mineralization which is an indication of carnallite due to the volume of water in the mineral structure of carnallite versus sylvinite. There are a few holes, also north of the Property, where the grades of potash exceed 10% and are as high has 16.9% K_2O; they are notably interpreted to be sylvinite in Govt 18-2, Quintana Fed 1-1 and Fed DE-1. As such the thickness of the mineralized zones is attenuated.

In some cases, the sylvinite appears to be just below Clastic 4, with no intermediate salt bed. This was seen in Ten Mile 1-26 as well as in the aforementioned cluster of holes in the center portion of the Property, notably potash with higher grades. This is a little unusual and would suggest a rapid sediment influx that terminated potash precipitation rather than a more gradual transgression to a more open marine environment. This could indicate where the siliciclastic unit directly above acted as a magnesium sink where post-depositional alteration of carnallite to sylvinite occurred.

Grade decreases to the south and southeast from the center part of the Property and, in some cases, Potash 5 is not present.

A structure map at the base of Cycle 5 shows the bed gently dipping to the north on a strike approximately east-west (Figure 10-3).

10.2.2 Cycle 9

Cycle 9 is usually carnallitic and shows no appreciable mineralization on the subject property (Table 10-4). The carnallitic nature of Potash 9 is best illustrated as seen by the extreme thickness (16.5 m) in Federal 1-27U.

Table 10-3. Cycle 5 Picks

	Salt 5			Potash 5				
Hole Name	**From (m)**	**To (m)**	**Thickness (m)**	**From (m)**	**To (m)**	**Thickness (m)**	**Peak eK_2O (%)**	**Composite eK_2O (%)**
Salt Wash North Unit 1	1,887.9	1,913.2	25.3	1,888.1	NP			
Floy Unit 1	1,934.1	1,965.8	31.7	1,934.6	1,940.5	5.9	11.8	7.0
Govt 18-2	1,789.8	1,816.6	26.8	1,789.8	1,792.8	3.0	23.9	16.9
CF&I 22-16	1,827.1	1,862.2	35.1	1,829.1	1,836.4	7.3	12.6	6.0
CF&I 42-16	1,860.8	1,892.5	31.7	1,861.9	1,866.7	4.9	12.6	5.7
Govt Smoot 3				IC				
Govt Smoot 2	1,885.3	1,933.0	47.7	1,885.3	1,892.7	7.3	18.2	10.0
Fed 1-15	1,770.1	1,802.3	32.2	1,770.6	1,771.8	1.2	3.6	3.0
State 1-16A	1,823.3	1,853.2	29.9	1,823.3	1,826.4	3.0	13.5	8.6
Jakey's Ridge	1,715.9	1,751.5	35.7	1,718.2	1,720.6	2.4	5.9	5.4
MT Fuel Federal 1-21	2,036.4	2,079.0	42.7	2,036.5	2,050.2	13.7	10.4	6.0
Gorman Fed 1	1,851.2	1,884.0	32.8	1,851.2	NP			
Federal DE-1	2,015.6	2,042.0	26.4	2,015.9	2,020.8	4.9	13.9	10.7
Federal Skyline 1A SW	1,803.8	1,837.0	33.2	1,805.8	NP			
Quintana Fed 1-1	1,762.7	1,798.9	36.3	1,763.3	1,769.2	5.9	22.1	15.2
Gruvers Mesa 1	1,723.6	1,758.5	34.9	1,731.3	NP			
Federal 1-27U	**1,821.6**	**1,861.0**	**39.3**	**1,827.4**	**1,830.8**	**3.4**	**10.2**	**6.8**
Ten Mile 1-26	**1,636.8**	**1,671.8**	**35.1**	**1,637.7**	**1,641.0**	**3.4**	**21.3**	**16.4**
Gruvers Mesa 2	1,465.3	1,499.9	34.6	1,470.4	NP			
Cane Creek Federal 7-1	1,694.1	1,727.6	33.5	1,694.1	1,698.7	4.6	21.2	13.5
Kane Springs Fed 10-1	1,618.9	1,658.6	39.6	1,620.0	1,625.2	5.2	22.1	15.9
McRae Federal 1	1,594.1	1,630.7	36.6	1,594.1	1,599.3	5.2	*No grade estimate*	
Federal 1-20	1,415.8	1,464.1	48.3	1,416.4	1,419.3	2.9	19.0	12.7
Bowknot Unit 43-20	1,268.6	1,304.2	35.7	1,268.9	1,269.9	1.1	4.7	3.5
Kane Springs Fed 28-1	1,401.0	1,442.8	41.8	1,401.0	1,409.9	8.8	11.7	6.0
Fed Bowknot 1	1,332.6	1,367.8	35.2	1,336.1	1,343.3	7.2	1.6	1.3
Quintana Fed 1-35	**1,414.6**	**1,466.4**	**51.8**	**1,419.0**	**NP**			
Mineral Canyon Federal 1-3	1,394.3	1,450.7	56.4	1,394.6	1,398.4	3.8	17.6	12.4
Mineral Point Fed 1-4	**1,346.9**	**1,385.3**	**38.4**	**1,347.2**	**1,349.3**	**2.1**	**4.3**	**4.2**
Tidewater 74-11	1,415.8	1,450.8	35.1	1,415.8	1,420.4	4.6	*No grade estimate*	
Mineral Point USA 1	1,357.9	1,392.9	35.1	1,362.2	NP			
Big Flat 4	1,508.8	1,540.0	31.2	1,508.8	1,510.9	2.1	4.7	4.4
Kane Springs Fed 20-1	1,447.5	1,491.4	43.9	1,449.6	1,452.4	2.7	3.8	3.6

NP = not present; IC = incomplete; **bold typeface indicates wells on Property**

(shaded) *Not mineralized/very low grade*

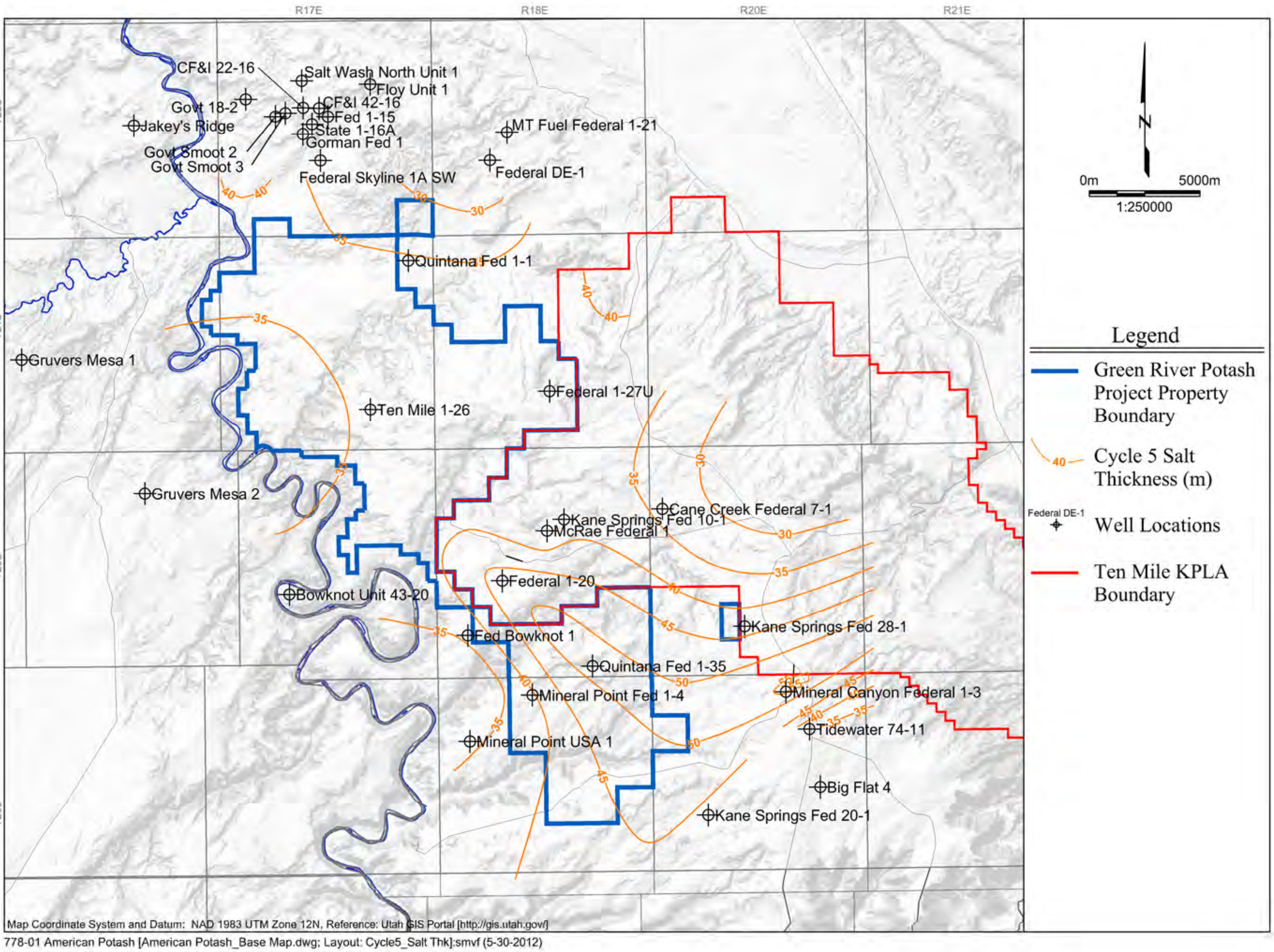
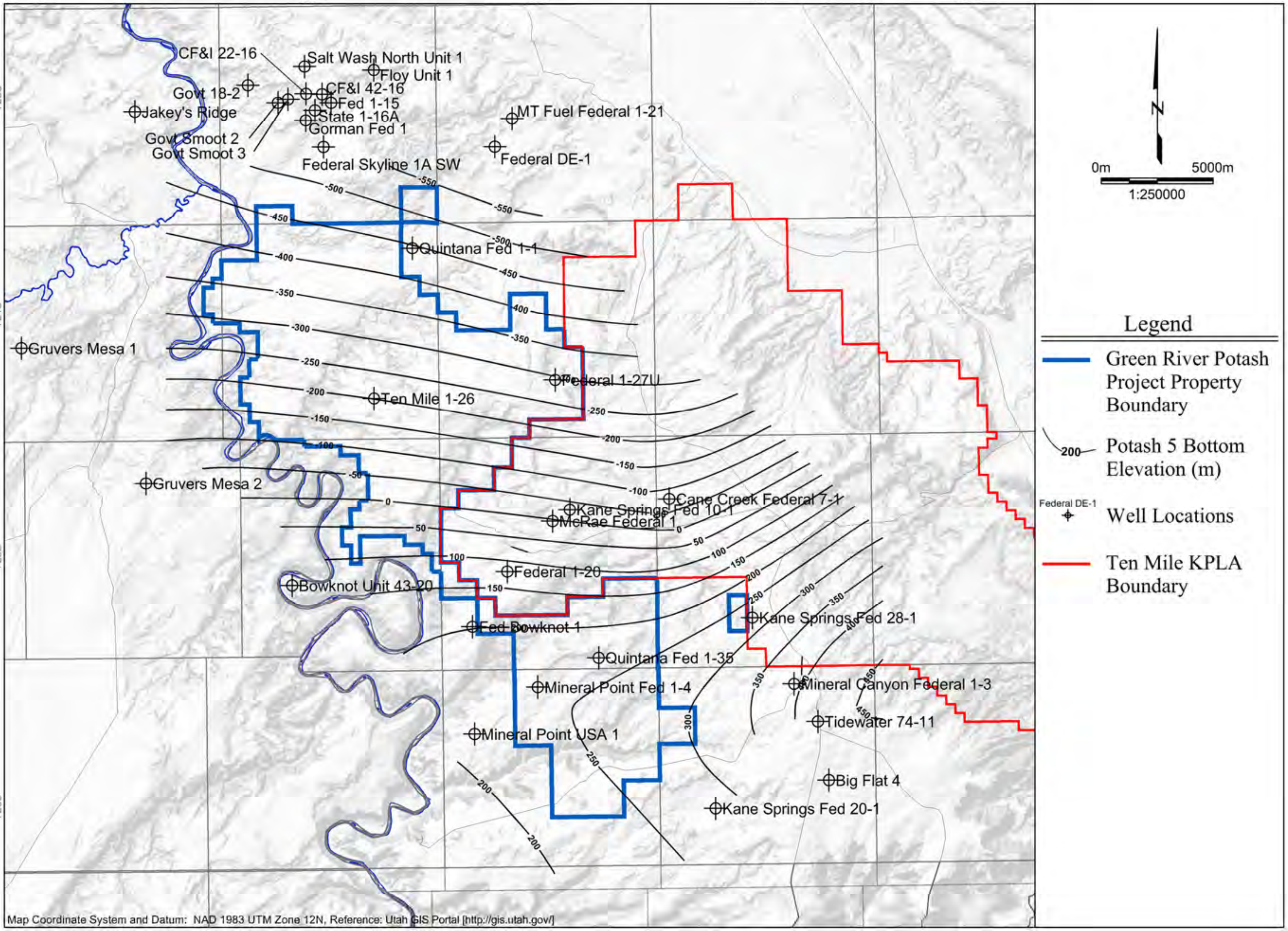


Figure 10-2. Cycle 5 Salt Thickness



778-01 American Potash [American Potash_Base Map.dwg; Layout: P5_Btm Elev]:smvf (5-30-2012)

Figure 10-3. Potash 5 Structure

Table 10-4. Cycle 9 Picks

	Potash 9				
Hole Name	From (m)	To (m)	Thickness (m)	Peak eK_2O (%)	Composite eK_2O (%)
Salt Wash North Unit 1	2,072.8	NP			
Floy Unit 1	2,132.1	2,133.4	1.4	2.4	1.9
Govt 18-2	1,953.3	NP			
CF&I 22-16	2,005.6	NP			
CF&I 42-16	2,042.2	NP			
Govt Smoot 3	*Invalid log*				
Govt Smoot 2	2,085.4	NP			
Fed 1-15	1,969.0	NP			
State 1-16A	2,000.9	NP			
Jakey's Ridge	1,870.6	1,874.5	4.0	7.4	5.5
MT Fuel Federal 1-21	2,244.2	2,245.2	0.9	2.2	2.2
Gorman Fed 1	2,045.8	NP			
Federal DE-1	2,188.5	2,189.5	1.1	3.1	2.5
Federal Skyline 1A SW	1,986.4	NP			
Quintana Fed 1-1	1,967.5	NP			
Gruvers Mesa 1	1,875.4	NP			
Federal 1-27U	**2,029.7**	**2,046.1**	**16.5**	**2.3**	**1.6**
Ten Mile 1-26	**1,821.0**	**NP**			
Gruvers Mesa 2	1,601.7	NP			
Cane Creek Federal 7-1	1,953.0	1,954.2	1.2	3.1	2.3
Kane Springs Fed 10-1	1,811.4	NP			
McRae Federal 1					
Federal 1-20	1,628.9	NP			
Bowknot Unit 43-20	1,417.9	NP			
Kane Springs Fed 28-1	1,610.9	NP			
Fed Bowknot 1	1,515.8	NP			
Quintana Fed 1-35	1,637.4	NP			
Mineral Canyon Federal 1-3	1,664.4	NP			
Mineral Point Fed 1-4	**1,546.3**	**1,549.1**	**2.9**	**3.6**	**2.3**
Tidewater 74-11					
Mineral Point USA 1	1,527.7	NP			
Big Flat 4	1,676.4	NP			
Kane Springs Fed 20-1	1,636.8	NP			

NP = not present; **bold typeface indicates wells on Property**

(shaded) *Not mineralized/very low grade*

10.2.3 Cycle 13

Thickness and grade for Potash 13 was estimated for four separate beds and composited over the entire interval (Table 10-5). Although estimated grades were as high as 14.3% eK_2O north of the Property overall the unit showed composited grades of less than 4.1% over thicknesses from 7.9 to 22.3 m. Typically mineralization was interpreted to be sylvinite but carnallite was sometimes below the sylvinite in Beds A and B and found in Beds C and D on the south and south western area on and near the Property boundary. Composited thicknesses were up to 85.5 ft in the center of the Property.

10.2.4 Cycle 18

Potash 18 is not always seen on the Property and where present only Potash 18 Upper is seen and it is interpreted to be sylvinite (Table 10-6). In the central portion of the Property in Cane Creek Federal 7-1 and Kane Springs Fed 10-1 estimated grade is 13.9 and 14.4% eK_2O, peak estimated grade of 20.6% with thicknesses of 2.0 m and 1.4 m respectively. McRae Federal-1 has no scale on the log to estimate grade but appears to be similar in thickness and amplitude to the neighboring Fed 10-1.

Table 10-5. Cycle 13 Picks

	Potash 13A					Potash 13B					Potash 13C					Potash 13D					Potash 13 Totals	
Hole Name	**From (m)**	**To (m)**	**Thickness (m)**	**Peak eK_2O (%)**	**Composite eK_2O (%)**	**From (m)**	**To (m)**	**Thickness (m)**	**Peak eK_2O (%)**	**Composite eK_2O (%)**	**From (m)**	**To (m)**	**Thickness (m)**	**Peak eK_2O (%)**	**Composite eK_2O (%)**	**From (m)**	**To (m)**	**Thickness (m)**	**Peak eK_2O (%)**	**Composite eK_2O (%)**	**Thickness (m)**	**Composite eK_2O (%)**
Salt Wash North Unit 1	2,222.6	2,226.4	3.8	6.6	4.3	0.0	0.0	0.0			0.0	0.0	0.0								3.8	4.3
Floy Unit 1	2,278.4	2,281.0	2.6	4.0	3.3	2,288.1	2,291.5	3.4	4.4	3.2	2,294.5	2,296.7	2.1	9.6	6.8						8.1	4.2
Govt 18-2	2,110.4	2,113.6	3.2	5.2	4.0	2,115.2	2,116.7	1.5	7.5	6.0	2,118.5	2,121.1	2.6	9.0	6.5	2,128.1	2,130.7	2.6	13.9	8.6	9.9	6.2
CF&I 22-16	2,118.5	2,126.7	8.2	7.1	4.9	2,137.6	2,144.9	7.3	8.4	4.1											15.5	4.5
CF&I 42-16	2,171.9	2,172.9	1.1	3.9	3.1	2,178.3	2,183.3	5.0	4.9	2.9	2,189.4	2,195.3	5.9	8.6	5.0						12.0	4.0
Govt Smoot 3																						
Govt Smoot 2	2,189.1	2,193.0	4.0	5.9	5.4	2,195.9	2,202.2	6.2	6.1	4.8	2,203.9	2,207.4	3.5	7.8	5.3	2,210.9	2,213.8	2.9	14.3	9.3	16.6	5.8
Fed 1-15	2,104.9	2,117.0	12.0	7.2	3.6	2,120.0	2,122.9	2.9	10.4	6.5											14.9	4.2
State 1-16A	2,127.4	2,131.6	4.3	6.2	3.7	2,134.1	2,135.0	0.9	5.6	4.6	2,136.5	2,140.0	3.5	5.4	4.0	2,143.2	2,145.6	2.4	13.0	9.0	11.1	5.0
Jakey's Ridge	2,017.9	2,019.8	1.8	8.3	7.3	2,027.7	2,037.4	9.8	6.5	3.7											11.6	4.3
MT Fuel Federal 1-21	2,379.3	2,387.3	8.1	5.7	4.6																8.1	4.6
Gorman Fed 1	2,179.0	2,184.3	5.3	4.7	3.7																5.3	3.7
Federal DE-1	2,336.1	2,342.5	6.4	5.8	4.6	2,351.7	2,358.1	6.4	6.7	3.9	2,373.6	2,378.0	4.4	5.4	3.9	2,385.7	2,390.2	4.6	6.8	5.7	21.8	4.5
Federal Skyline 1A SW	2,140.2	NP																			0.0	0.0
Quintana Fed 1-1	2,102.1	2,109.2	7.2	4.5	3.3	2,109.2	2,112.0	2.7	4.2	3.2	2,112.1	2,118.7	6.6	5.3	3.3	2,120.3	2,127.5	7.2	9.3	4.6	23.6	3.7
Gruvers Mesa 1	1,962.8	1,967.2	4.4	9.4	6.0	1,972.2	1,975.7	3.5	3.6	2.3											7.9	4.3
Federal 1-27U	**2,162.6**	**2,166.1**	**3.5**	**3.9**	**3.2**	**2,167.6**	**2,170.2**	**2.6**	**3.2**	**2.4**	**2,170.2**	**2,175.5**	**5.3**	**4.5**	**3.2**	**2,179.6**	**2,181.6**	**2.0**	**6.3**	**4.5**	**13.4**	**3.2**
Ten Mile 1-26	**1,950.7**	**1,956.8**	**6.1**	**7.0**	**4.4**	**1,956.8**	**1,961.8**	**5.0**	**5.6**	**3.3**	**1,961.8**	**1,971.3**	**9.4**	**5.8**	**3.6**	**1,974.2**	**1,979.7**	**5.5**	**11.5**	**4.6**	**26.1**	**4.0**
Gruvers Mesa 2	1,675.6	1,680.2	4.6	12.3	6.5	1,680.2	1,685.8	5.6	16.1	5.3	1,685.8	1,694.2	8.4	15.1	6.1	0.0	0.0	0.0			18.6	5.9
Cane Creek Federal 7-1	2,129.0	2,133.4	4.4	5.5	3.6	2,133.4	2,136.8	3.4	5.2	3.4	2,136.8	2,143.2	6.4	5.3	3.8	2,145.5	2,150.1	4.6	9.7	5.6	18.7	4.1
Kane Springs Fed 10-1	1,940.1	1,947.2	7.2	4.3	3.2	1,947.2	1,950.0	2.7	4.0	3.0	1,950.0	1,955.7	5.8	4.7	3.2	1,957.7	1,961.8	4.1	7.3	5.1	19.8	3.6
McRae Federal 1	1,926.3	1,929.4	3.0	*No grade estimate*		1,930.3	1,934.0	3.7	*No grade estimate*		1,954.7	1,959.9	5.2	*No grade estimate*							11.9	
Federal 1-20	1,751.2	1,754.7	3.5	3.2	1.8	1,756.7	1,761.9	5.2	7.4	3.8	1,761.9	1,766.8	4.9	8.8	3.4	1,766.8	1,771.0	4.3	1.9	1.7	17.8	2.8
Bowknot Unit 43-20	1,506.0	1,509.7	3.7	13.4	7.5	1,509.7	1,513.8	4.1	9.4	5.7	1,516.5	1,523.5	7.0	4.2	2.4						14.8	4.6
Kane Springs Fed 28-1	1,743.0	1,748.5	5.5	5.4	4.7	1,750.9	1,752.1	1.2	5.2	4.3	1,757.5	1,764.5	7.0	5.2	4.2	1,767.7	1,770.9	3.2	6.5	5.2	16.9	4.5
Fed Bowknot 1	1,659.9	1,665.9	5.9	4.4	2.7	1,665.9	1,673.5	7.6	6.4	3.7	1,676.9	1,682.5	5.6	7.0	4.1	*Clastic Based on Neutron*					19.2	3.5
Quintana Fed 1-35	**1,748.3**	**1,753.8**	**5.5**	**4.3**	**2.9**	**1,753.8**	**1,757.0**	**3.2**	**3.7**	**2.8**	**1,757.0**	**1,763.9**	**6.9**	**4.4**	**3.1**	**1,766.6**	**1,770.9**	**4.3**	**7.7**	**3.7**	**19.8**	**3.1**
Mineral Canyon Federal 1-3	1,805.0	1,810.1	5.0	3.8	2.8	1,810.1	1,814.3	4.3	3.7	2.5	1,814.3	1,818.1	3.8	4.9	3.2	1,820.7	1,825.9	5.2	10.2	5.5	18.3	3.6
Mineral Point Fed 1-4	**1,682.3**	**1,686.8**	**4.4**	**4.0**	**2.6**	**1,686.8**	**1,690.9**	**4.1**	**4.4**	**2.5**	**1,690.9**	**1,698.5**	**7.6**	**5.2**	**3.0**	**1,702.5**	**1,708.7**	**6.2**	**9.6**	**5.1**	**22.4**	**3.4**
Tidewater 74-11	1,842.5	1,847.1	4.6	*No grade estimate*		1,851.7	1,856.2	4.6	*No grade estimate*		1,859.3	1,867.8	8.5	*No grade estimate*							17.7	
Mineral Point USA 1	1,626.6	1,628.5	2.0	2.8	2.1	1,631.9	1,640.6	8.7	5.2	2.4	1,640.6	1,645.9	5.3	2.8	2.3						16.0	2.4
Big Flat 4	1,806.2	1,815.4	9.1	4.3	2.9	1,818.7	1,822.7	4.0	6.3	3.5											13.1	3.1
Kane Springs Fed 20-1	1,768.3	1,769.8	1.5	3.8	2.4	1,769.8	1,773.0	3.2	7.5	4.2	1,773.0	1,778.7	5.6	8.1	4.2	1,782.5	1,786.4	4.0	9.7	6.0	14.3	4.5

NP = not present; **bold typeface indicates wells on Property**

Not mineralized/very low grade *Carnallite*

Table 10-6. Cycle 18 Picks

	Potash 18A				
Hole Name	From (m)	To (m)	Thickness (m)	Peak K_2O (%)	Composite eK_2O (%)
Salt Wash North Unit 1	2,353.1	NP			
Floy Unit 1	2,435.4	2,436.7	1.4	13.9	9.9
Govt 18-2	2,264.7	NP			
CF&I 22-16	2,260.4	NP			
CF&I 42-16	2,334.8	NP			
Govt Smoot 3	0.0	0.0	0.0	*Invalid log*	
Govt Smoot 2	2,317.2	2,318.2	0.9	2.9	2.8
Fed 1-15	2,250.6	NP			
State 1-16A	2,277.8	NP			
Jakey's Ridge	2,161.0	NP			
MT Fuel Federal 1-21	2,589.9	2,593.5	3.7	18.9	13.5
Gorman Fed 1	2,305.1	2,305.8	0.8	2.3	2.0
Federal DE-1	2,552.9	2,554.5	1.7	17.9	11.9
Federal Skyline 1A SW	2,273.0	NP			
Quintana Fed 1-1	2,267.7	NP			
Gruvers Mesa 1	2,097.9	NP			
Federal 1-27U	**2,329.3**	**2,338.0**	**8.7**	**1.7**	**1.5**
Ten Mile 1-26	2,133.0	NP			
Gruvers Mesa 2	1,838.6	1,839.9	1.4	3.5	3.2
Cane Creek Federal 7-1	2,303.4	2,305.4	2.0	20.6	13.9
Kane Springs Fed 10-1	2,099.5	2,100.8	1.4	20.6	14.4
McRae Federal 1	2,144.3	2,147.3	3.0	*No grade estimate*	
Federal 1-20	1,909.6	NP			
Bowknot Unit 43-20	1,640.9	NP			
Kane Springs Fed 28-1	1,954.7	1,957.1	2.4	14.5	9.7
Fed Bowknot 1	1,826.2	NP			
Quintana Fed 1-35	**1,944.3**	**1,949.3**	**5.0**	**2.4**	**1.8**
Mineral Canyon Federal 1-3	1,979.4	1,982.3	2.9	18.3	9.7
Mineral Point Fed 1-4	**1,862.3**	**NP**			
Tidewater 74-11	2,094.6	2,100.1	5.5	*No grade estimate*	
Mineral Point USA 1	1,787.7	NP			
Big Flat 4	1,983.0	1,984.4	1.4	13.8	9.9
Kane Springs Fed 20-1	1,949.8	1,952.2	2.4	12.8	10.2

NP = not present; **bold typeface indicates wells on Property**

(shaded) *Not mineralized/very low grade*

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

No samples have been collected or evaluated on the subject Property.

12.0 DATA VERIFICATION

The well records obtained are of varying vintages, and scanning for digital output could compound error in the records. Well records are available as TIFF files and in many cases originate from photocopied records from as far back as the 1950's. In many cases, the wells have an incomplete suite of logs making confirmation of grade and mineralogy difficult or impossible. In addition, some logs lack scale or a scale that can be used for proper evaluation.

Most of the data available for the subject Property area were collected during the exploration for hydrocarbons, and evidence for the occurrence of potash is generally indirect in the form of geophysical logs from oil and gas wells. Well log data and reports are available online through the UDOGM website. UDOGM notes that "historical information may not be 100% complete or accurate. Much of the data for older activity comes from a previously used database where the tracking of historical information was not a function. Information for work done prior to 1999 has the greatest potential for error." Drill hole locations and base maps are available through the Utah State Geographic Information Database (USGID 2012).

A site visit was made to the Property by QP's Leo Gilbride and Vanessa Santos on 25 April 2012. The property was inspected along paved, gravel and dirt roads and two historic holes of interest were located, Shell Quintana Fed 1-35 (Figure 12-1) and Ten Mile 1-26 (Figures 12-2 and 12-3).

It is the opinion of the QPs that the data used, including records obtained from the UDOGM database, are adequate for the definition of the NI 43-101 Exploration Target defined in this report.

Figure 12-1. Shell Quintana Fed 1-36 Well Cap

Figure 12-2. Ten Mile 1-26 Well Pump

Figure 12-3. Ten Mile 1-26 Well Pump Placard

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The Property is an exploration property. No mineral processing or metallurgical testing has been conducted to date.

14.0 MINERAL RESOURCE ESTIMATES

The Paradox Basin hosts up to 29 evaporative cycles with as many as 11 of economic interest for potash mining containing sylvinite or carnallite. On the Property, potash mineralization occurs in Potash (bed) 5 and Potash 18, while trace amounts of potash also occur in Potash 6, 9, 13, and 16. Potash 5 is the principal bed of interest with potential for solution mining. Potash 18 is considered a secondary bed of interest.

Potash 5 is classified as an NI 43-101 Exploration Target based on elog data from historical oil and gas wells, as described in Section 10—Drilling. Numerical estimates of potential mineralization are based on indirect indicators of potash grade and thickness derived from the elogs.

No core or assay data exist on the Property.

The Exploration Target estimates were prepared by Leo J. Gilbride, P.E., Senior Consultant with AAI, member of the Society for Mining, Metallurgy, and Exploration, Inc., and QP for this Technical Report. The Exploration Target estimates have an effective date of 10 October 2012.

14.1 Definitions and Applicable Standards

For this report and in accordance with NI 43-101, the definitions of "resource" and "reserve" apply as published in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards on Mineral Resources and Mineral Reserves (CIMDS) that were adopted 27 November 2010 (CIM 2010). In this standard, a **Mineral Resource** is defined as

> *… a concentration of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade of quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.*

Mineral Resources are subdivided into classes of measured, indicated, and inferred, with the level of confidence reducing with each class, respectively. Phosphate resources are reported as in-situ tonnage and are not adjusted for mining losses or mining recovery.

A **Mineral Reserve** is defined as "… the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study…"

CIMDS states that for the reporting of industrial mineral resources and reserves, issuers are to use the above definitions. CIM provides further guidance on reporting practice under Best Practice Guidelines for Industrial Minerals adopted by CIM Council on 23 November 2003 (CIM 2003).

NI 43-101 Part 2.3.1(a) restricts disclosure of "the quantity, grade, or metal or mineral content of a deposit that has not been categorized as an inferred mineral resource, an indicated mineral resource, a measured mineral resource, a probable mineral reserve, or a proven mineral reserve." Despite Part 2.3.1(a), Part 2.3.2 allows an issuer to disclose in writing the potential quantity and grade, expressed as ranges, of a target for further exploration if the disclosure (a) states with equal prominence that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource; and (b) states the basis on which the disclosed potential quantity and grade has been determined. Such disclosure is referred to as an **Exploration Target**.

14.2 Base Case Mining Scenario

A Mineral Resource must meet the minimum requirement of "reasonable prospects for economic extraction." This requires the concurrent collection and storage of preliminary economic, mining, metallurgical, environmental, legal, and social data and other information for use in the estimation of Mineral Resource and Mineral Reserve. As a minimum, reasonable prospects for economic extraction must consider a base case mining scenario for the purpose of establishing geologic cutoffs for defining the Mineral Resource. An Exploration Target assumes potential exists for identifying reasonable prospects for economic extraction as exploration matures, although such prospects are not assured.

The GRPP Property is reasonably assumed to have prospects for economic extraction by solution mining if favorable geologic conditions are discovered. The uppermost potash mineralization averages 1,700 m deep and is presently considered too deep to be economically attractive by conventional underground mining, but is comparable to other mainstream potash solution mining operations throughout the industry.

Solution mining involves the circulation of heated water through wells to either selectively or non-selectively dissolve the targeted potash beds. Solution mining produces caverns in the potash beds that are generally supported by fluid pressure during the extraction phase. The success of solution mining depends upon numerous geologic factors, including potash grade, bed thickness, bed dip, the presence of structural disturbance such as faults or folding, insolubles content in the potash bed, ground temperature, depth, and the time-dependent deformation characteristics of the potash and host salt.

14.3 Methodology

Potash bed correlations were developed from a total of 33 historical oil and gas wells, as described in Section 10—Drilling. Top and bottom picks and bed composite eK_2O grades were estimated and compiled in a computer-based Microsoft Excel™ spreadsheet for resource modeling. Potash bed thicknesses and grades were spatially modeled across the Property using Carlson Mining 2011 Software™ Geology Module (Carlson 2011), an industry-recognized commercial-grade geologic and mine modeling software system that runs within AutoDesk Inc.'s AutoCAD 2011©.

The potash beds of interest were gridded into single layers of 50-m-square blocks of variable vertical thickness representing the local thickness of the respective potash bed. Block thickness and eK_2O grade values were estimated from neighboring wells (point data) using an Approximation Base on Smoothing (ABOS) modeling algorithm. ABOS is a method for modeling values of irregularly spaced points by using a continuous function dependent on numerical tensioning and smoothing parameters. The ABOS method is well-suited to modeling tabular deposits with widely spaced holes and produces results comparable to other common methods such as kriging, radial basis functions, or minimum curvature.

Grids were also created for top and bottom elevations of each bed based on well intercept elevations and using the ABOS method. Seam conformance was invoked in the ABOS algorithm which forced the prescribed sequence of stratigraphy at all grid locations, thus improving structural accuracy in areas with weaker drill hole control. Bed overburden (depth) and interburden thickness grids were created by subtracting the respective grids. The ground surface elevation grid used for the depth calculations was generated from a commercially available USGS 7.5-minute digital elevation model.

In-place potash tonnages were calculated using an *in situ* bulk density of 2.08 tonnes per cubic meter (t/m^3) typical for sylvinite.

14.4 Exploration Target Estimates

Potash beds 5, 18, 13, 9, 16, and 6 are reported in order of importance.

14.4.1 Potash 5

Potash 5 is an Exploration Target projected to contain between 0.6 and 1.0 billion tonnes of sylvinite at an average grade ranging between 12 and 18% eK_2O (19 and 29% eKCl), assuming a bed thickness cutoff of 2.0 m and a composite grade cutoff of 10% eK_2O. Detailed engineering feasibility and economic analysis may or may not require higher cutoffs at the Mineral Resource or Mineral Reserve stage depending upon specific project evaluation criteria. The Potash 5 Exploration Target is summarized in Table 14-1.

Table 14-1. Potash 5 Exploration Target
(effective date 10 October 2012)†

Average grade (% eK_2O)	12	–	18
Average grade (% eKCl)	19	–	29
Average thickness (m)	2.5	–	5
Tonnage (Mt)	600	–	1,000

† Target cutoffs: 10% eK_2O bed composite grade and 2.0 m bed thickness.

A baseline estimate of tonnes and grade was calculated using the Carlson geologic model. Modeled bed thickness and eK_2O grade contours for Potash 5 are shown in Figure 14-1. The Exploration Target is stated in terms of ranges that surround the model computations. The

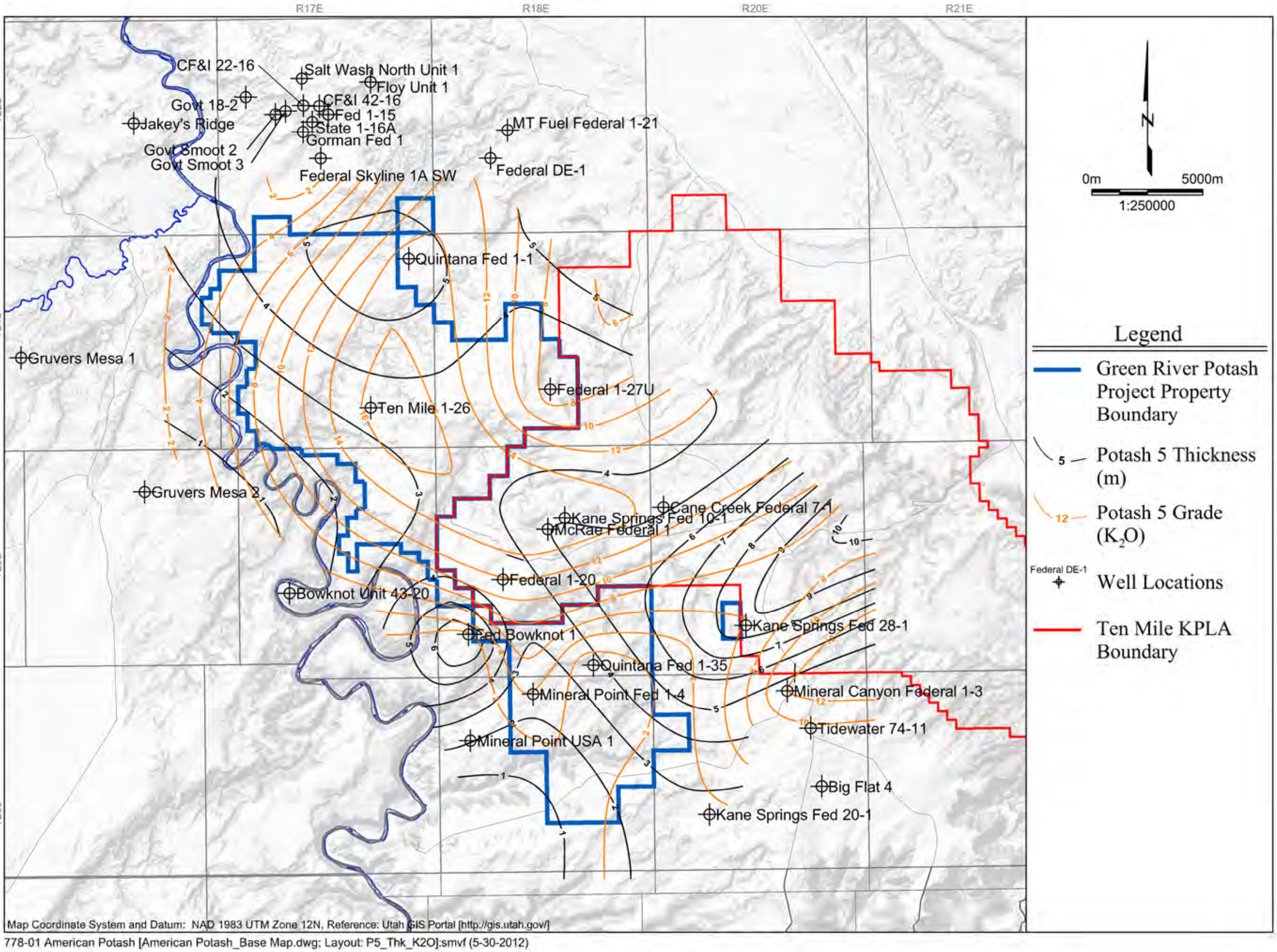


Figure 14-1. Potash 5 Modeled Bed Thickness and Grade Contours

ranges reflect geologic uncertainty at this preliminary exploration stage, as well as the inherent uncertainty associated with thickness and grade estimated from elogs.

The lower and upper limits of the tonnage range consider the variability in bed thickness and presence of potash mineralization that may be encountered. While the oil and gas well data indicate strong bed continuity across the property, thinning or thickening between wells is possible. Faults, collapse features, and other structural disturbances can sterilize resource locally.

The occurrence of sylvinite can be affected by basement carbonate mounds, algal reefs, post-depositional gypsum dewatering, groundwater leaching along fault conduits, and by other complex depositional and structural mechanisms. Carnallite and halite intrusions are known to occur in the Paradox Basin and can degrade or eliminate sylvinite resource on a localized or regional basis. The loss of grade or introduction of problematic mineralogy associated with these intrusions or transitions zones can substantially affect resource tonnes. Exploration drilling is required to define the presence or absence of these features and the thickness and grade variability of the deposit before a Mineral Resource can be claimed.

Well data indicate that Potash 5 is continuous across the Property and of thickest and highest grade in the central and north-central part of the Property. Regional information suggests that attractive occurrences of Potash 5 persist to the east beyond the Property boundary. Contrary to this, Well Federal 1-27U indicates a decrease in grade near the northeastern Property boundary. Exploration is especially warranted in the northeast area to substantiate the resource and investigate the counter-trending lower grade in Well Federal 1-27U.

The reader is cautioned that the Potash 5 Exploration Target is conceptual in nature and there has been insufficient exploration to define it as a Mineral Resource, and it is uncertain if further exploration will result in the determination of a Mineral Resource under NI 43-101. The Exploration Target is not being reported as part of any Mineral Resource or Mineral Reserve.

14.4.2 Potash 18

Potash 18 is a regionally extensive potash bed prominent in the central and southern Paradox Basin. Potash 18 persists as far north as the Ten Mile area. Potash 18 (sylvinite) occurs at the extreme southeast margin of the Property where it is estimated to be 2 to 3 m thick and average between 10% and 20% eK_2O (16% and 32% eKCl). Elogs suggest that the bed decreases in grade and eventually transitions to halite to the west. Modeled bed thickness and eK_2O grade contours for Potash 18 are shown in Figure 14-2.

The limited property acreage to the east where Potash 18 is most prevalent precludes the estimation of an Exploration Target at present.

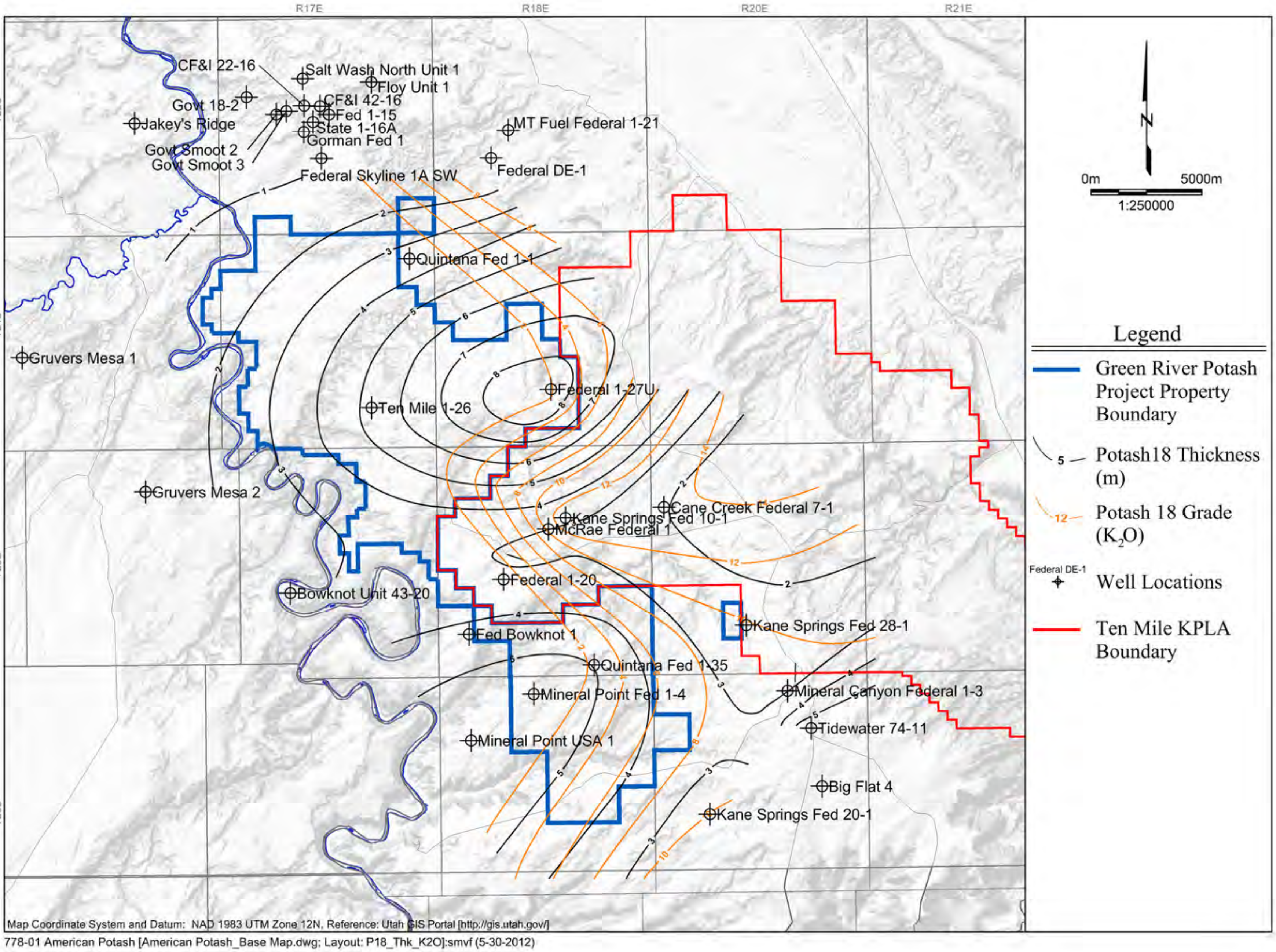


Figure 14-2. Potash 18 Modeled Bed Thickness and Grade Contours

14.4.3 Potash 13

Potash 13 is a regionally extensive potash bed that attains its greatest thickness in the northern part of the Paradox Basin. Potash 13 achieves a maximal thickness on the Property of 26 m in well Ten Mile 1-26. Potash 13 is projected to average on the order of 20 m thick across the Property based on preliminary geologic modeling. Modeled contours of bed thickness and K_2O grade are shown in Figure 14-3.

Potash 13 is low grade, ranging between about 2 and 6% eK_2O in wells across the Property. Within the bed itself, local grades were observed to climb as high as 16% eK_2O over small intervals, typically 0.3 m or less. No instances were observed of composite grades reaching or exceeding 10% eK_2O over mineable thicknesses. Potash 13 is primarily sylvinitic, but carnallitic at its base in multiple holes.

Potash 13 is projected to contain between 9 and 12 billion tonnes of potash averaging between 2 and 5% eK_2O (3 and 8% eKCl). Potash 13 is presently considered subgrade for solution mining and, accordingly, is excluded as an Exploration Target. Limited exploration drilling of Potash 13 is warranted to confirm expectations.

14.4.4 Potash 9

Potash 9 is characteristically a thin, high-grade potash bed which is solution mined at Intrepid's Moab Mine to the southeast. Potash 9 generally occurs as a thin, low-grade bed in seven holes located disparately across the Property. The bed grades to halite in the majority of holes on the Property. The strongest showing occurs in well Jakey's Ridge 34-15 7 km northwest of the Property where Potash 9 is on the order of 4 m thick at a composite grade of 5% eK_2O (8% eKCl). An unusually thick (16 m), but very low grade (<2% eK_2O) occurrence of Potash 9 appears in well Federal 1-27U located in the northeast quadrant of the Property. Potash 9 is excluded as an Exploration Target.

14.4.5 Potash 16

Potash 16 appears absent on the Property, but occurs in three neighboring wells located 3 to 5 km north-northeast of the Property. Potash thicknesses range from 3 to 9 m with composite grades ranging between 8 and 11% eK_2O (13 and 17% eKCl). Within the Property boundaries, Potash 16 is excluded as an Exploration Target, but may warrant exploration drilling if mineral holding are extended to the north in the future.

14.4.6 Potash 6

Potash 6, referred to as the "Carnallite Marker" (Hite 1960), has great regional extent throughout the Paradox Basin and locally attains thicknesses of over 30 m. The bed consists principally of carnallite. Core from other area in the Paradox Basin reveals that Potash 6 typically consists of carnallite occurring in thin bands interspersed with anhydrite laminae and halite, with minor amounts of the mineral kieserite. Hite (1982) described the potash content of

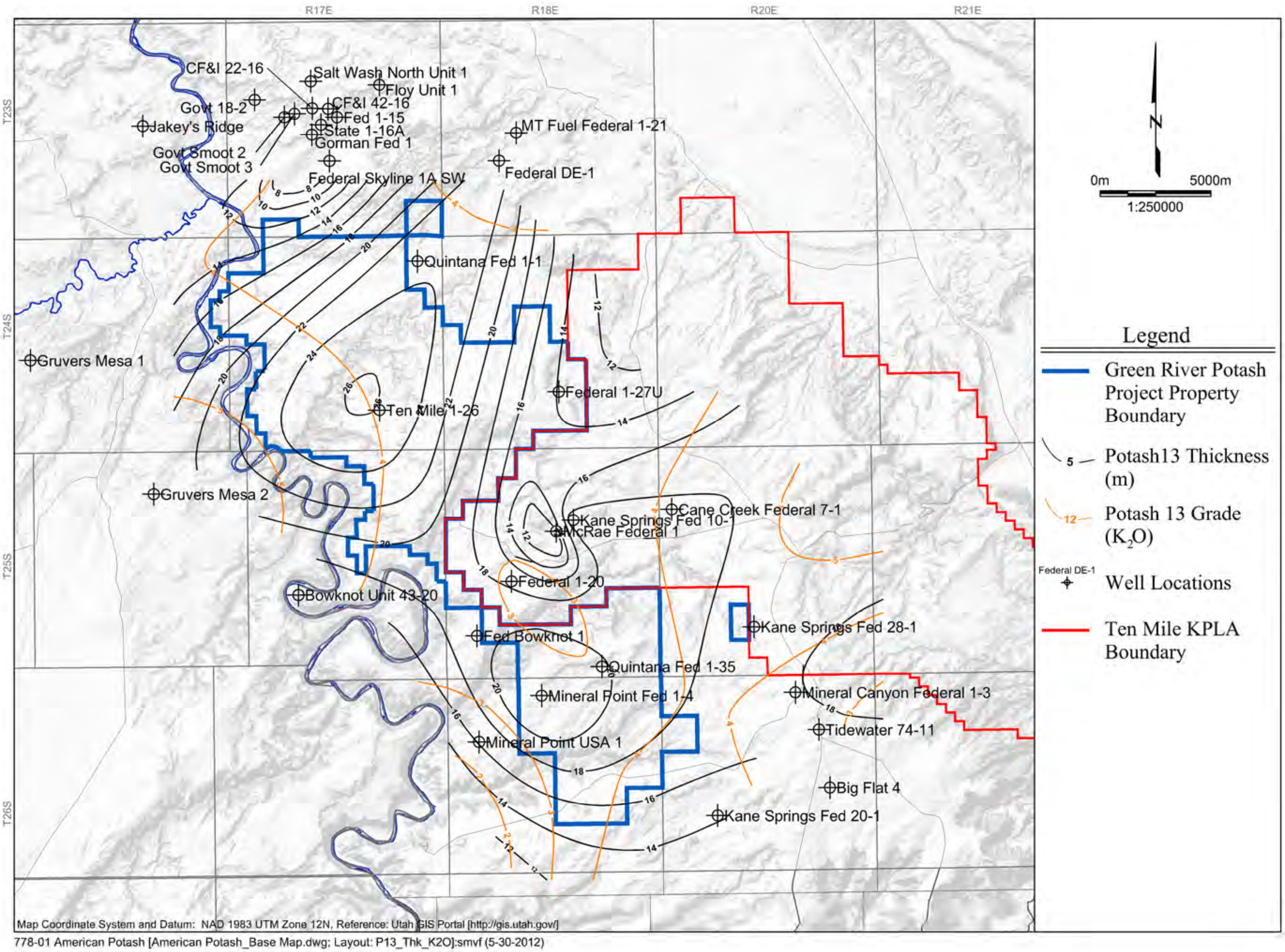


Figure 14-3. Potash 13 Modeled Bed Thickness and Grade Contours

Potash 6 as consistently low across the Paradox Basin, averaging on the order of 1.0% K_2O over its full interval. Potash 6 is considered too low grade to have economic potential and is excluded an Exploration Target.

Carnallite is ordinarily considered an impurity in potash solution mining because it adversely affects the solubility of halite and sylvite. The presence of magnesium is unfavorable for K_2O recovery, and concentrations over 0.25% magnesium can impact plant performance and require special non-standard processing. Carnallite, while not mined in North America, is solution mined to limited extents in Europe and Africa. Carnallite is a low-grade source of K_2O compared to potash. Pure carnallite is equivalent to 17.0% K_2O compared to 63.0% K_2O for pure potash, for a ratio of 1:3.71. Carnallite also can be a source of magnesium.

Carnallite is distinguished from other potassium minerals in the geophysical logs by a distinctively low log density and/or high neutron porosity. Carnallite has the lowest specific gravity (1.6) relative to sylvite (2.0), halite (2.2), limestone (2.5), dolomite (2.6), anhydrite (3.0), and other minor potassium minerals (2.1 to 2.8) in the Paradox Formation. Mixtures of carnallite, sylvinite, kieserite ($MgSO_4 \cdot H_2O$), and other potassium minerals are common. Bed density can indicate the dominant mineral when density is biased to one extreme or the other. Intermediate densities can indicate mixed mineralogy. Minor impurities generally cannot be identified from the electronic logs. Chemical analysis of core is normally required to accurately determine the relative fraction of the mineral constituents.

15.0 MINERAL RESERVE ESTIMATES

The Property is an exploration property. No estimates of Mineral Reserves are stated.

16.0 MINING METHODS

The Property is an exploration property. No advanced evaluation of mining methods is being disclosed in this Technical Report.

17.0 RECOVERY METHODS

The Property is an exploration property. No advanced evaluation of recovery methods is being disclosed in this Technical Report.

18.0 PROJECT INFRASTRUCTURE

The Property is an exploration property. No advanced evaluation of infrastructure is being disclosed in this Technical Report.

19.0 MARKET STUDIES AND CONTRACTS

The Property is an exploration property. No advanced evaluation of market conditions or contracts is being disclosed in this Technical Report.

20.0 ENVIRONMENTAL, PERMITTING AND COMMUNITY IMPACT

The Property is an exploration property. No advanced evaluation of environmental, permitting, or community impacts is being disclosed in this Technical Report.

21.0 CAPITAL AND OPERATING COSTS

The Property is an exploration property. No advanced evaluation of capital or operating costs is being disclosed in this Technical Report.

22.0 ECONOMIC ANALYSES

The Property is an exploration property. No advanced economic analysis of mining is being disclosed in this Technical Report.

23.0 ADJACENT PROPERTIES

23.1 Moab Potash Mine

Intrepid (NYSE:IPI) operates the Moab solution mine, historically known as the Cane Creek Mine, located approximately 14 km southeast of the Property. The operation was started by Texasgulf in 1964 as a conventional room-and-pillar potash mine in the Cycle 5 potash horizon at a depth of approximately 900 m. The mine faced problems with high temperatures, methane, a highly folded and undulating potash bed, and squeezing ground conditions. After driving over 560 km of underground workings (Garrett 1995), the mine was intentionally flooded in 1970 and subsequently operated as a solution mine. Intrepid purchased the mine from Potash Corporation of Saskatchewan in 2000, which acquired Texasgulf in 1995. The mine is located on Utah State potash leases (Intrepid 2012).

Water is saturated with salt (NaCl) and the resulting brine is pumped through injection wells into the underground mine workings. The NaCl-saturated brine preferentially dissolves the potash (KCl), producing a heavier-than-NaCl-saturated brine which sinks to low points in the mine. Extraction wells are installed at low points to pump the KCl-rich brine to the surface, where it is placed into 164 ha of shallow evaporation ponds just southwest of the mine. Blue dye, similar to food coloring, is added to the evaporation pond brines, to aid in absorption of sunlight. There, the water, aided by approximately 300 days of sunshine and an average of just 5% relative humidity evaporates, leaving potash and salt crystals in the pond. The solar ponds are lined with high-density polyethylene and Hypalon (a synthetic rubber) to prevent brine from escaping the ponds (Intrepid 2012).

The end result of the evaporation process is a bed of potash and salt crystals that is harvested using scrapers adapted from the earth-moving industry. The crystals from the ponds are sent to a mill where the potash is separated from the salt by flotation. The potash and salt are dried, sorted, and processed into various agricultural, feed, and industrial products (Intrepid 2012).

In the past decade, Intrepid began mining the Cycle 9 potash horizon located 240 m stratigraphically below Cycle 5. Solution mining is conducted through a network of horizontal wells directionally drilled in the potash bed (Intrepid 2012).

The Moab Mine presently produces on the order of 100,000 tonnes per year (tpy) muriate of potash (or KCl), down from the underground mine's original nameplate capacity of 540,000 tpy. Intrepid reports a remaining mine life of 125 years based on current production rates and remaining reserves (Intrepid 2012). The mine is serviced by the Cane Creek Subdivision railroad spur which extends south from the Union Pacific Railroad mainline at Thompson, Utah.

The potash horizons mined by Intrepid in Cycles 5 and 9 persist to the west and northwest along the Cane Creek Anticline and extend into the GRPP Property.

Vanessa Santos, P.G, Leo J. Gilbride, P.E. and AAI technical staff have not verified information related to the Moab Mine. Such information is not necessarily indicative of mineralization on the Property.

24.0 OTHER RELEVANT DATA AND INFORMATION

In the early 1980s through the 1990s the prices of potash product as muriate of potash at 60–63% K_20 concentrate had been around $80 to $90 USD per tonne. In recent years, increased demand for fertilizer products by emerging and first world economies has led to a rapid increase in price peaking at $1,000 per tonne in 2008 and correcting downward where current pricing is in the range of $450 to $500 USD per tonne. Demand is expected to increase at a rate of approximately 4% per year in the next 5 years (Jasinski 2012).

Recent price increases have resulted in more intense exploration efforts in the Paradox Basin, and elsewhere, as well as significant increased planned capacity in Saskatchewan, Canada. Most potash is produced in the Elk Point/Williston Basin in Saskatchewan, Canada, historically in conventional underground mines but also from solution mines. In 2011, Canada produced 11.2 Mt out of a worldwide production of approximately 37 Mt. Belarus is the second largest producer at 5.5 Mt and the USA produces 1.1 Mt. Apparent USA consumption is 6.5 Mt, 85% of which is used for fertilizer (Jasinski 2011).

25.0 INTERPRETATION AND CONCLUSIONS

The GRPP Property contains significant potash mineralization in sufficient quantities and of sufficient grade to be an attractive target for exploration and further study of solution mining potential. Lithium brines also occur on the Property and represent upside solution mining potential. Potash is present in at least six evaporite cycles on the Property. Of these, Potash 5 is the principal bed of interest. Potash 18 occurs in sufficient grade and thickness to be of interest to the east off the Property. The grade of the other prominent beds, Potash 6, 9, 13, and 16, are too low to be of current economic interest. Potash 16 shows improved grade and thickness beyond the Property to the north.

Potash 5 is a regionally extensive sylvinite bed in the northern Paradox Basin and is continuous in solution-mineable thicknesses across a majority of the Property, based on the preliminary interpretation of elog data from 33 oil and gas wells dispersed across the Property or within 8 km of its borders. Potash 5 is classified as an NI 43-101 Exploration Target projected to contain between 0.6 and 1.0 billion tonnes of sylvinite with an average grade ranging between 12 and 18% eK_2O (19 and 29% eKCl), assuming a bed thickness cutoff of 2.0 m and a composite grade cutoff of 10% eK_2O. Potash 5 ranges between 1,200 and 1,900 m deep on the Property. Intrepid currently solution mines Potash 5, as well as Potash 9, at the Moab Mine 14 km to the southeast.

Preliminary analysis of elog data suggests that Potash 5 is generally thin and low grade to the west and improves in thickness and grade across the Property to the northeast. The best resource appears centralized to the northeast quadrant of the Property in the vicinity of the Quintana Fed 1-1, Ten Mile 1-26, and Kane Springs Fed 10-1 wells where Potash 5 ranges from about 3 to 6 m thick at 14% to 16% eK_2O (22% to 25% eKCl). Regional information suggests that attractive occurrences of Potash 5 persist to the east beyond the Property boundary. Contrary to this, Well Federal 1-27U near the Property's northeastern boundary shows a decrease in grade to less than 8% eK_2O (13% eKCl). Exploration is especially warranted in this area to substantiate the Potash 5 resource and investigate the counter-trending lower grade in Well Federal 1-27U.

Exploration Targets are conceptual in nature and there has been insufficient exploration to define them as Mineral Resources, and, while reasonable potential may exist, it is uncertain whether further exploration will result in the determination of a Mineral Resource under NI 43-101 standards. The Potash 5 and 18 Exploration Targets are not being reported as part of any Mineral Resource or Mineral Reserve.

Potash 18 is a regionally extensive potash bed prominent in the central and southern Paradox Basin and persists as far north as the Ten Mile area. Potash 18 (sylvinite) occurs east of the Property in the Ten Mile KPLA where it is estimated to be 2 to 3 m thick and average between 10% and 20% eK_2O (16% and 32% eKCl). Elogs suggest that the bed decreases in grade and eventually transitions to halite to the west. Potash 18 is approximately 500 m below Potash 5.

The GRPP is an early-stage exploration property. Principal risks associated with advancing the Property are geologic uncertainty and uncertainty with mineral tenure. Risks associated with the future feasibility of solution mining, which include engineering design, permitting, and environmental, socioeconomic, and market constraints, are concerns to be evaluated at later stages.

The principal risk at the exploration phase is geologic uncertainty. While oil and gas well data indicate strong bed continuity across the property, variations in potash thickness, grade, and mineralogy are possible. Faults, collapse features, diapirism, and other structural disturbances can sterilize resource locally. Sylvinite mineralogy can be affected by varying depositional environments or structure, including basement carbonate mounds, algal reefs, post-depositional gypsum dewatering, groundwater leaching along fault conduits, and by other complex depositional and structural features.

Carnallite and halite incursions are known to occur in the Paradox Basin and can degrade or eliminate sylvinite resource on a localized or regional basis. The loss of grade or introduction of problematic mineralogy can substantially affect the size of a potential resource. Exploration drilling is required to define the presence or absence of these features and the thickness and grade variability of the deposit before a Mineral Resource can be claimed. Core drilling and chemical analysis is required to confirm grade and mineralogy.

Mineral tenure is not secure on the federal lands comprising the majority of the Property and poses a risk to advancement of the project. While American Potash is well positioned with respect to acquiring mineral rights through the federal potash PPA process, risk exists that American Potash may be denied approval of some or all of the PPA's depending upon the outcome of the 2014 MLP being developed. The path forward to potash leasing through the PPA process is uncertain because of special terms under American Potash's MOU with the BLM which subjects preference right leasing to the outcome of the pending 2014 MLP, which could include new mineral leasing stipulations and development constraints amended to the land use plans. The scope of stipulations may or may not substantially affect leasing and/or future development of the Property.

In January 2012, the BLM publically expressed willingness to grant approval for the commencement of prospecting activities in the Paradox Basin while the MLP is being drafted. However, the BLM cautioned that the investment in prospecting activities, including exploration drilling, and successful demonstration of a valuable deposit does not guarantee the BLM will grant a potash lease. The BLM could permit exploration drilling on lands that will be later deemed unleasable.

Exploration drilling on the Property is warranted based on existing geologic evidence, notwithstanding any risk associated with securing mineral tenure on federal lands. Initial exploration drilling should be focused in the north-central part of the Property where Potash 5 resource potential is highest.

26.0 RECOMMENDATIONS

Potash 5 warrants exploration drilling for the purpose of defining the potash resource. Initial exploration drilling should focus on the northern part of the Property where the Potash 5 potential is highest. Specific recommendations and budgetary costs for a first and second phase of exploration are as follows:

Phase I Geology/Exploration—Drill one exploration core hole to prove grade, thickness, and mineralogy in the most prospective area around historical well Quintana Fed 1-1 targeting Potash 5. The Quintana Fed 1-1 well shows a Potash 5 intercept of 5.9 m at a composite grade of 15% eK_2O (24% eKCl). Potash 18 is not present at this location. Estimated cost to drill is $1.99M.

Run a complete geophysical suite for evaluation including gamma ray, spectral gamma, neutron, density, caliper, and sonic. Estimated cost is $40,000.

Assay the potash zone at 0.3-m intervals and at least 2 m into the salt above and below the potash bed. Estimated cost is $6000.

Estimated cost for drilling one hole, running a complete geophysical suite and completing assay work for the Phase I exploration drilling program is $2.0 million.

Phase II Geology/Exploration and Seismic Evaluation—Pending favorable results from the Phase I exploration drilling program, step-out drilling is recommended in Phase II for the purpose of upgrading the Potash 5 Exploration Target to a Mineral Resource. Four additional holes are recommended for defining an initial Mineral Resource in the north area.

In addition, two prospect holes are recommended in the southern part of the Property to assess the presence of Potash 5 to the south.

Run a VSP in at least one well for the purpose of generating a synthetic seismogram to improve the analysis of existing 2D or future 2D or 3D seismic measurements. The downhole log for the VSP is a dipole sonic that collects wavelength velocities around and below the drill hole. Estimated cost of a VSP survey is $20,000 to $40,000.

As referenced above the, estimated cost for the drilling of six holes and related downhole geophysical work and assay is $12.0 million to $18.0 million. Each hole will cost about $1.99 M to drill and the cost to run a complete geophysical suite is $40,000 per hole. Assay work is estimated at about $6000 per hole.

Four 2D trade seismic lines covering the northern half of the Property were acquired and interpreted by a third-party consultant. Tops of interest were selected. The four lines were interpreted as showing no major structure influencing the beds of interest. Little information has been provided as supporting documentation on this interpretation. A report describing the methodology, while not critical to the exploration drilling plans, would substantiate the interpretation of continuity of the salt cycles and the regional structure. If this work is done after the VSP work is completed, a seismogram could be generated, correlated to the existing seismic lines, and possibly, refine the structural model.

Recommendations are to complete a technical report substantiating the interpretation.

Estimated cost for the seismic analysis and reporting is $30,000 to $60,000.

Estimated cost for the entire Phase II program is $12.3 to $18.6 million.

In March 2012, American Potash received approval from the State of Utah to commence exploration drilling on one of its northern state leases. American Potash plans to drill a first hole, named "Duma Point," targeting the Potash 5 in Section 2, Township 24 South and Range 17 East (Salt Lake Meridian) near historical well Quintana Fed 1-1. Two additional drilling permits on state leases are pending.

27.0 REFERENCES

43 CFR Part 3500 (1999), "Leasing of Solid Minerals Other than Coal and Oil Shale; Final Rule," Federal Register, Part III, Department of the Interior, Bureau of Land Management, October 1.

Allen, Gordon J. (2009), "Report on the Potash Potential of the Green River Potash Project Area, Grand County, Utah," Technical Report for American Potash LLC.

Arestad, John (2011), "Green River Potash Project, Northwest Project Area, Grand County, Utah Seismic Reflection Reprocessing and Interpretation Summary Report," ExplorTech LLC, December.

Baars, D. L. (1966), "Pre-Pennsylvanian Paleotectonics Key to Basin Evolution and Petroleum Occurrences in Paradox Basin," American Association of Petroleum Geologists Bulletin, 50:2082–2111.

Baars, D. L. (1976), "The Colorado Plateau Aulacogen: Key to Continental-Scale Basement Rifting," *Proceedings of the Second International Conference on Basement Tectonics*, pp. 157–164.

Baars, D. L. and H. H. Doelling (1987), "Moab Salt-Intruded Anticline, East-Central Utah, *Centennial Field Guide*, Rocky Mountain Section of the Geological Society of America.

Baars, D. L. and G. M. Stevenson (1981), "Tectonic Evolution of the Paradox Basin, Utah and Colorado," *Geology of the Paradox Basin*, Wiegand, D. L., editor, Rocky Mountain Association of Geologists Guidebook, pp. 23–31.

Baars, D. L. and P. D. See (1968), "Pre-Pennsylvanian Stratigraphy and Paleotectonics of the San Juan Mountains, Southwestern Colorado," Geological Society of America Bulletin, **79**:333–350.

Brown, A. L. (2002), "Outcrop to Subsurface Stratigraphy of the Pennsylvanian Hermosa Group, Southern Paradox Basin, U.S.A.," PhD dissertation, Louisiana State University and Agricultural and Mechanical College.

Condon, S. M. (1997), "Geology of the Pennsylvanian and Permian Cutler Group and Permian Kaibab Limestone in the Paradox Basin, Southeastern Utah and Southwestern Colorado," *Evolution of Sedimentary Basins-Paradox Basin*, A.C. Huffman, ed., USGS Bulletin 2000-P.

Doelling, H. H. (2000), "Geology of Arches National Park, Grand County, Utah," *Geology of Utah's Parks and Monuments*, Sprinkel, D.A., T. C. Chidsey, Jr. and P. B. Anderson, editors, Utah Geological Association Publication 28, pp. 11–36.

Durgin, Dana C. (2011), "Technical Report, Geology and Mineral Resources, Utah Potash Project-White Cloud, Salt Wash and Whipsaw Areas, Grand County, Utah, USA," report for Mesa Exploration Corporation.

Fouret, K. L. (1996), "Depositional and Diagenetic Environment of the Mississippian Leadville Limestone at Lisbon Field, Utah," *Geology and Resources of the Paradox Basin*, Huffman, A. C., Jr., W. R. Lund, and L. H. Godwin, editors, Utah Geological Association Publication 25, pp. 129–138.

Garrett, D. E. (1995), *Potash Deposits, Processing, Properties and Uses*, Springer, 752 pp.

Graham, J. (2004), "Arches National Park Geologic Resource Evaluation Report," Natural Resource Report NPS/NRPC/GRD/NRR—2004/005, National Park Service, Denver, Colorado.

Harry, D. L. and K. L. Mickus (1998), "Gravity Constraints on Lithosphere Flexure and the Structure of the Late Paleozoic Ouachita Orogen in Arkansas and Oklahoma, South Central North America," *Tectonics*, **17**(2):187–202, doi:10.1029/97TC03786.

Hildenbrand, T.G. and Kucks, R.P. (1983), *Regional Magnetic and Gravity Features of the Gibson Dome Area and Surrounding Region, Paradox Basin, Utah: A Preliminary Report*, USGS OFR 83-359.

Hintze, L. F. (1993), "Geologic History of Utah," Brigham Young University Studies Special Publication 7, 202 pp.

Hite, R. J. (1960), "Stratigraphy of the Saline Facies of the Paradox Member of the Paradox Formation of Southeastern Utah and Southwestern Colorado," *Geology of the Paradox Fold and Fault Belt, Third Field Conference Guidebook: Four Corners Geological Society*, Smith, K.G., ed., pp. 86–89.

Hite, R. J. (1961), "Potash-Bearing Evaporite Cycles in the Salt Anticlines of the Paradox Basin, Colorado and Utah," *Short Papers in the Geologic and Hydrogeologic Sciences*, USGS Professional Paper 424D, pp. D135–D138.

Hite, R. J. (1970), "Shelf Carbonate Sedimentation Controlled by Salinity in the Paradox Basin, Southeast Utah," *Third Symposium on Salt*, Rau, J. L. and L. F. Dellwig, editors, Northern Ohio Geological Society, **1**:48–66.

Hite, R. J. (1976), "A Potential Target for Potash Solution Mining in Cycle 13, Paradox Member, Near Moab, Utah," USGS Open-File Report 76-755, U.S. Department of the Interior, Geological Survey.

Hite, R. J. (1982), "Potash Deposits in the Gibson Dome Area, Southeast Utah," USGS OFR-82-1067.

Hite, R. J. (1983), "Preliminary Mineralogy and Geochemical Data from the DOE Gibson Dome Corehole No.1, San Juan County, Utah," USGS OFR 83-780.

Hite, R. J., D. E. Anders, and T. G. Ging (1984), "Organic-Rich Source Rocks of Pennsylvanian Age in the Paradox Basin of Utah and Colorado, in *Hydrocarbon Source Rocks of the Greater Rocky Mountain Region: Rocky Mountain Association of Geologists Field Conference Guidebook*, J. Woodward, F. F. Meissner and J. L. Clayton, eds., pp. 255–274.

Intrepid 2011 and Intrepid 2012, Moab Facility, <http://www.intrepidpotash.com/AboutUs/ Locations Operations/MoabUT.aspx>, accessed by V. Santos, April.

Jasinski, S. M. (2011), *2009 Minerals Yearbook*, Potash chapter (advanced release), USGS.

Jasinski, S. M. (2012), *Annual Commodity Summaries*, Potash chapter, USGS.

Kelley, V. C. (1958), "Tectonics of the Region of the Paradox Basin," *Guidebook to the Geology of the Paradox Basin*, Sanborn, A. F., editor, Intermountain Association of Petroleum Geologists, pp. 31–38.

Kluth, C. F. (1986), "Plate Tectonics of the Ancestral Rocky Mountains," *Paleotectonics and Sedimentation in the Rocky Mountain Region, U.S.*, Peterson, J.A., ed., American Association of Petroleum Geologists, Memoir 41, pp. 353–369.

Kluth, C. F. and P. J. Coney (1981), "Plate Tectonics of the Ancestral Rocky Mountains," *Geology*, **9**(1):10–15.

Massoth, T. W. and B. T. Tripp (2011), "Consulting Geologist, Well database of Salt Cycles of the Paradox Basin, Utah," Utah Geological Survey Open-File Report 581.

Nuccio, V. F. and S. M. Condon (1996), "Burial and Thermal History of the Paradox Basin, Utah and Colorado, and Petroleum Potential of the Middle Pennsylvanian Paradox Formation," USGS Bulletin 2000.

Peterson, J. A. (1966), "Genesis and Diagenesis of Paradox Basin Carbonate Mound Reservoirs," *Symposium on Recently Developed Geologic Principles and Sedimentation of the Permo-Pennsylvanian of the Rocky Mountains*, Wyoming Geological Association, 20th Annual Field Conference, pp. 67–86.

Peterson, J. A. (1989), "Geology and Petroleum Resources, Paradox Basin Province," Open-File 88-450 U.

Raup, O. B. and R. J. Hite (1992), "Lithology of Evaporite Cycles and Cycle Boundaries in the Upper Part of the Paradox Formation of the Hermosa Group of Pennsylvanian Age in the Paradox Basin, Utah and Colorado," USGS OFR91-373.

Schlumberger (1968), “Fundamentals of Quantitative Log Interpretation-Schlumberger Log Interpretation Principles,” Oberto Serra.

Schlumberger (1991), “Log Interpretations Principles/Applications,” in O. Serra (1994) “Evaporites and Well Logs,” in *Evaporite Sequences in Petroleum Exploration; 1. Geological Methods*, Editions Technip, French Oil and Gas Industry Association, Technical Committee, GRECO 52 (CNRS), PA8.

Stevenson, G. M. and D. L. Baars (1986), “The Paradox: A Pull-Apart Basin of Pennsylvanian Age,” *Paleotectonics and Sedimentation in the Rocky Mountain Region, United States*, Peterson, J.A., editor, American Association of Petroleum Geologists Memoir 41, pp. 513–539.

Stewart, F. H. (1963), “Marine Evaporites,” *Data of Geochemistry*, chapter Y, 6th edition, Michael Fleischer, editor, USGS Professional Paper 440-Y.

Trudgill, B. D. and W. C. Arbuckle (2009), “Reservoir Characterization of Clastic Cycle Sequences in the Paradox Formation of the Hermosa Group, Paradox Basin, Utah,” Open-File Report 543, Utah Geological Survey.

U.S. Department of the Interior, Bureau of Land Management and Office of the Solicitors (2001), *The Federal Land Policy and Management Act of 1976, as Amended* U.S. Department of the Interior, Bureau of Land Management Office of Public Affairs, Washington, DC, 69 pp.

Utah Division of Oil, Gas and Mining (UDOGM) (2012), Data Research Center, Utah Oil and Gas, Division of Oil, Gas and Mining, Department of Natural Resources, <http://www.oilgas.ogm.utah.gov/Data_Center /DataCenter.cfm>.

Utah State Geographic Information Database (USGID), Utah GIS Portal, <http://agrc.utah.gov/ gisresources>.

Warner, L. A. (1978), “The Colorado Lineament: a Middle Pre-Cambrian Wrench Fault System,” Geological Society of America Bulletin 89, pp. 161–171.

Welsh, J. E. and H. J. Bissell (1979), “The Mississippian and Pennsylvanian (Carboniferous) Systems in the United States—Utah,” USGS Professional Paper 1110-Y, 35 pp.

Williams-Stroud, S. C. (1994), “Solution to the Paradox? Results of Some Chemical Equilibrium and Mass Balance Calculations Applied to the Paradox Basin Evaporite Deposit,” *American Journal of Science*, 294:1189–1228.

Other Reviewed Sources

Alger, R. P., and E. R. Crain (1966), “Defining Evaporite Deposits with Electrical Well Logs,” in Trans Northern Ohio Geological Society’s *Second Symposium on Salt*, Cleveland, Ohio quoted in Schlumberger (1972) *Log Interpretation Principles Vol 2—Applications.*

Baars, D. L. (1958), “Cambrian Stratigraphy of the Paradox Basin Region,” *Guidebook to the Geology of the Paradox Basin,* Sanborn, A. P., editor, Intermountain Association of Petroleum Geologists, pp. 93–101.

Baars, D. L. (1975), “The Permian System of Canyonlands Country,” *Canyonlands Country*, Fassett, J. E., editor, Four Corners Geological Society Eighth Field Conference, pp. 123–127.

Bambach, R. K., C. R. Scotese and A. M. Ziegler (1980), “Before Pangea the Geographies of the Paleozoic World,” *American Scientist*, 68:26–38.

Berghorn, C. and F. S. (1981), “Facies Recognition and Hydrocarbon Potential of the Pennsylvanian Paradox Formation,” *Geology of the Paradox Basin*, Wiegand, D. L., editor, Rocky Mountain Association of Geologists, pp. 111–117.

Burchfield, B. C. and J. H. Stewart (1966), “Pull-Apart Origin of the Central Segment of Death Valley, California,” *Geological Society of America Bulletin*, 77:439–442.

Bureau of Land Management, Moab Field Office (2008), “Proposed Resource Management Plan and Final Environmental Impact Statement,” August.

Canadian Institute of Mining, Metallurgy and Petroleum (CIM) (2003), “Estimation of Mineral Resources and Mineral Reserves, Best Practice Guidelines: Canadian Institute of Mining, Metallurgy and Petroleum,” 23 November 2003, <http://www.cim.org/committees/-estimation2003.pdf>.

Canadian Institute of Mining, Metallurgy and Petroleum (CIM) (2005), “CIM Standards for Mineral Resources and Mineral Reserves, Definitions and Guidelines: Canadian Institute of Mining, Metallurgy and Petroleum,” 2005, <http://www.cim.org/committees/-CIMDefStds_Dec11_05.pdf>.

Carlson Mining 2011 Software© (2011), web site <http://www.carlsonsw.com>.

Campbell, J. A. (1969), “Upper Valley Oil Field, Garfield County, Utah,” *Geology and Natural History of the Grand Canyon Region: Fifth Field Conference*, Four Corners Geological Society, pp. 195–201.

Carter, K. E. (1958), “Stratigraphy of Desert Creek and Ismay Zones and Relationship to Oil, Paradox Basin, Utah,” *Guidebook to the Geology of the Paradox Basin*, Sanborn, A.F., editor, Intermountain Association of Petroleum Geologists, pp. 138–145.

Cater, F. W., Jr. (1955), “The Salt Anticlines of Southwestern Colorado and Southeastern Utah,” *Guidebook to Geology of parts of Paradox, Black Mesa, and San Juan Basins*, Four Corners Geological Society, pp. 125–131.

Cater, F. W., Jr. and D. P. Elston (1963), "Structural Development of Salt Anticlines of Colorado and Utah," *Backbone of the Americas*, American Association of Petroleum Geologists, Memoir 2, pp. 152–159.

Chapin, C. E. and S. M. Gather (1983), "Eocene Tectonics and Sedimentation in the Colorado Plateau—Rocky Mountain Area," *Rocky Mountain Foreland Basins and Uplifts*, Lowell, J. D., editor, Rocky Mountain Association of Geologists, pp. 33–56.

Doelling, H. H. (2001), "Geologic Map of the Moab and Eastern Part of the San Rafael Desert 30″ × 60″ Quadrangles, Grand and Emery Counties, Utah and Mesa County, Colorado," Utah Geologic Survey Map #180, scale 1:100,000.

Doelling, H. H., C. G. Oviatt and P. W. Huntoon (1988), "Salt Deformation in the Paradox Basin," Bulletin 122, Utah Geological and Mineral Survey, a division of the Utah Department of Natural Resources.

Doelling, H. H., T. C. Chidsey and B. J. Benson (2010), "Geology of Dead Horse Point State Park, Utah," *Geology of Utah's Parks and Monuments*, Utah Geological Association Publication 28 (Third Edition), Sprinkel, Chidsey and Anderson, editors, p. 413.

Elston, D. P. and E. M. Shoemaker (1960), "Late Paleozoic and Early Mesozoic Structural History of the Uncompahgre Front," *Geology of the Paradox Basin Fold and Fault Belt*, Smith, K.G., editor, Four Corners Geological Society, 3rd Field Conference Guidebook, pp. 47–55.

Elston, D. P., E. M. Shoemaker and E. R. Landis (1962), "Uncompahgre Front and Salt Anticline Region of Paradox Basin, Colorado and Utah," American Association of Petroleum Geologists Bulletin, 46:1857–1858.

Fetzner, R. W. (1960), "Pennsylvanian Paleotectonics of the Colorado Plateau," American Association of Petroleum Geologists Bulletin, 44:1371–1413.

Frahme, C. W. and E. B. Vaughan (1983), "Paleozoic Geology and Seismic Stratigraphy of the Northern Uncompahgre Front, Grande County, Utah," *Rocky Mountain Foreland Basins and Uplifts*, Lowell, J. D., editor, Rocky Mountain Association of Geologists, pp. 201–211.

Friedman, J. D., J. E. Case and S. L. Simpson (1994), "Tectonic Trends of the Northern Part of the Paradox Basin, Southeastern Utah and Southwestern Colorado, as derived from Landsat Multispectral Scanner Imaging and Geophysical and Geologic Mapping," *Evolution of Sedimentary Basins-Paradox Basin*, Huffman, A. C., editor, USGS Bulletin 2000-C.

Gorham, F. D., Jr. (1975), "Tectogenesis of the Central Colorado Plateau Aulacogen," *Canyonlands Country,* Fassett, J. E., editor, Four Corners Geological Society Eighth Field Conference Guidebook, pp. 211–216.

Hansen, G. H. (1956), “History of Exploration in Southeastern Utah,” *Geology and Economic Deposits of East-Central Utah*, Peterson, J. A., editor, Intermountain Association of Petroleum Geologists, Seventh Annual Field Conference, pp. 23–25.

Hite, R. J. (1968), “Salt Deposits of the Paradox Basin, Southeastern Utah and Southwestern Colorado,” *Saline Deposits*, Mattox, R. B., editor, GSA Special Paper 88, pp. 319–330.

Hite, R. J. and D. H. Buckner (1981), “Stratigraphic Correlations, Facies Concepts, and Cyclicity in Pennsylvanian Rocks of the Paradox Basin,” *Geology of the Paradox Basin*, Wiegand, D. L., editor, Rocky Mountain Association of Geologists, pp. 147–159.

Huffman, A. C., W. R. Lund, and L. H. Godwin, editors (1996), *Geology and Resources of the Paradox Basin*, Utah Geological Association Guidebook 25.

Jones, R.W. (1959), “Origin of Salt Anticlines of Paradox Basins,” American Association of Petroleum Geologists Bulletin, 43:1869–1895.

Katich, P. J. (1954), “Cretaceous and Early Tertiary Stratigraphy of Central and South-Central Utah, with Emphasis on the Wasatch Plateau Area,” *Fifth Annual Field Conference Guidebook*, Intermountain Association of Petroleum Geologists, pp. 42–54.

Katich, P. J. (1958), “Cretaceous of Southeastern Utah and Adjacent Areas,” *Guidebook to the Geology of the Paradox Basin*, Intermountain Association of Petroleum Geologists, pp. 193–196.

Linscott, R.O. (1958), “Petrography and Petrology of Ismay and Desert Creek Zones, Four Corners Region,” *Guidebook to the Geology of the Paradox Basin*, Sanborn, A. F., editor, Intermountain Association of Petroleum Geologists, pp. 146–152.

Magna Resources Ltd. (2009), “Magna Resources Ltd. Announces Joint Venture with Confederation Minerals Ltd. and Otion of US Potash Prospects,” <http://www. marketwire.com/press-release/Confederation-Minerals-Ltd-TSX-VENTURE-CFM 998877.html >, news release, June 3.

Malin, W. J. (1958), “A Preliminary Informal System of Nomenclature for a Part of the Pennsylvanian of the Paradox Basin,” *Guidebook to the Geology of the Paradox Basin*, Sanborn, A. F., editor, Intermountain Association of Petroleum Geologists, pp. 135–137.

Matheny, M. L. (1978), “A History of the Petroleum Industry in the Four Corners Area,” *Oil and Gas Fields of the Four Corners Area*, Fassett, J. E., editor, Four Corners Geological Society, pp. 17–24.

Molenaar, C. M. (1975), “Some Notes on Upper Cretaceous Stratigraphy of the Paradox Basin,” *Guidebook 8th Field Conference*, *Canyonlands Country*, Fassett, J. E., editor, Four Corners Geological Society, pp. 191–192.

Molenaar, C. M. (1981), "Mesozoic Stratigraphy of the Paradox Basin—An Overview," *Geology of the Paradox Basin*, Weigand, D. L., editor, Rocky Mountain Association of Geologists, pp. 119–127.

Molenaar, C. M. and D. L. Baars, editors (1985), "Field and River Trip Guide to Canyonlands Country, Utah," *Guidebook for Field Trip No. 7*, SEPM midyear meeting, Rocky Mountain Section, Society of Economic Paleotologists and Mineralogists, 74 pp.

Nelson, P. H. (2007), "Evaluation of Potash Grade with Gamma Ray Logs," USGS Open-File Report 20071292.

Ohlen, H. R. and L. B. Mclntyre (1965), "Stratigraphy and Tectonic Features of Paradox Basin, Four Corners Area," American Association of Petroleum Geologists Bulletin, 49:2020–2040.

Parker, J. W. and F. W. Roberts (1963), "Devonian and Mississippian Stratigraphy of the Central Part of the Colorado Plateau," *Shelf Carbonates of the Paradox Basin*, Bass, R.O. and S. L. Sharps, editors, Four Corners Geological Society, pp. 31–60.

Peterson, F. and C. Turner-Peterson (1989), *Geology of the Colorado Plateau*, 28th International Geological Congress, Field Trip Guidebook T-130, 65 pp.

Peterson, J. A. (1959), *Petroleum Geology of the Four Corners Area*, Fifth World Petroleum Congress, Proceedings, Section 1, pp. 499–523.

Peterson, J. A. and H. R. Ohlen (1963), "Pennsylvanian Shelf Carbonates, Paradox Basin," *Shelf Carbonates of the Paradox Basin*, Bass, R. O. and S. L. Sharps, editors, Four Corners Geological Society, pp. 65–79.

Peterson, J. A. and D. L. Smith (1986), "Rocky Mountain Paleogeography through Geologic Time," *Paleotectonics and Sedimentation*, Peterson, J. A., editor, American Association of Petroleum Geologists, Memoir 41, pp. 3–19.

Peterson, J. A. and R. J. Kite (1969), "Pennsylvanian Evaporite-Carbonate Cycles and Their Relation to Petroleum Occurrence, Southern Rocky Mountains," American Association of Petroleum Geologists Bulletin, 53:884–908.

Rygel, M. C., C. R. Fielding, T. D. Frank and L. P. Birgenheier (2008), "The Magnitude of Late Paleozoic Glacioeustatic Fluctuations: A Synthesis," *Journal of Sedimentary Research*, August 78(8):500–511

Shoemaker, E. M., J. E. Case and D. P. Elston (1958), "Salt Anticlines of the Paradox Basin," *Guidebook to the Geology of the Paradox Basin*, Sanborn, A. P., editor, Intermountain Association of Petroleum Geologists, pp. 39–59.

Spoelhof, R.W. (1976), "Pennsylvanian Stratigraphy and Paleotectonics of the Western San Juan Mountains, Southwestern Colorado," *Studies in Colorado Field Geology*, Epis, R. C. and

R. W. Weimer, editors, Professional Contributions of the Colorado School of Mines, (8):159–179.

Stokes, W. L. (1948), "Geology of the Utah-Colorado Salt Dome Region, with Emphasis on Gypsum Valley," *Guidebook to the Geology of Utah, 2*, Utah Geological Society, 50 pp.

Stokes, W. L. (1956), "Nature and Origin of Paradox Basin Salt Structures," *Geology and Economic Deposits of Eastern Utah*, Peterson, J. A., editor, Intermountain Association of Petroleum Geologists, 7th Annual Field Conference, pp. 42–47.

Stone, D. S. (1977), "Tectonic History of the Uncompahgre Uplift," *Exploration Frontiers of the Central and Southern Rockies*, Veal, H. K., editors, Rocky Mountain Association of Geologists, Guidebook, pp. 23–30.

Szabo, E. and S. A. Wengerd (1975), "Stratigraphy and Tectogenesis of the Paradox Basin," *8th Field Conference Guidebook, Canyonland Country*, Fassett, J. E., editor, Four Corners Geological Society, pp. 193–210.

Tabet, David E. (2005), "Mineral Potential Report for the Moab Planning Area," Moab Field Office, U.S. Department of the Interior, Bureau of Land Management, 83 pp.

U.S. Department of the Interior, Bureau of Land Management, Utah Lands Records (2012), Source for potash plats (maps of potash prospecting permit application areas), <http://www.ut.blm.gov/LandRecords/mtps his ut.cfm>.

Utah Geological and Mineralogical Survey (1965), "Concentrated Subsurface Brines in the Moab Region, Utah," Special Studies 13, by E. Jay Mayhew and Edgar B. Heylman, pp. 28, June.

Wengerd, S. A. (1951), "Reef Limestones of Hermosa Formation, San Juan Canyon, Utah," American Association of Petroleum Geologists Bulletin, 35:1038–1051.

Wengerd, S. A. (1958), "Pennsylvanian Stratigraphy, Southwest Shelf, Paradox Basin," *Shelf Carbonates of the Paradox Basin*, Bass, R. O. and S. L. Sharps, editors, Four Corners Geological Society, pp. 109–134.

Wengerd, S. A. (1962), "Pennsylvanian Sedimentation in Paradox Basin, Four Corners Region," *Pennsylvanian System in United States, a Symposium,* American Association of Petroleum Geologists, pp. 264–330.

Wengerd, S. A. and J. W. Strickland (1954), "Pennsylvanian Stratigraphy of Paradox Salt Basin, Four Corners Region, Colorado and Utah," American Association of Petroleum Geologists Bulletin, 38:2157–2199.

White, M. A. and M. I. Jacobson (1983), "Structures Associated with the Southwest Margin of the Ancestral Uncompahgre Uplift," *Northern Paradox Basin-Uncompahgre Uplift*, Averett, W. R., editor, Grand Junction Geological Society Guidebook, pp. 33–39.

Wiegand, D. E., editor (1981), *Geology of the Paradox Basin: Rocky Mountain Association of Geologists Guidebook*, 285 pp.

Williams-Stroud, S. C., J. P. Searls and R. J. Hite (1994), "Potash Resources," *Industrial Minerals and Rocks*, 6th Edition, Donald C. Carr, Senior Editor, Society for Mining, Metallurgy, and Exploration, Inc.

APPENDIX A

CERTIFICATES OF QUALIFIED PERSONS

(Serving as Date and Signature Page)

A.1 Statement of Certification by Principal Author

Leo J. Gilbride, P.E.
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CERTIFICATE OF QUALIFIED PERSON

I, Leo J. Gilbride, P.E., do hereby certify that:

1. I am a Senior Consultant with:

   Agapito Associates, Inc
   715 Horizon Drive, Suite 340
   Grand Junction, Colorado, 81506
   USA

2. I graduated with a degree in Civil Engineering *summa cum laude* from California Polytechnic State University, San Luis Obispo, California, USA, in 1992, and a Master of Science in Mining Engineering at the Mackay School of Mines, University of Nevada, Reno, USA, in 1995.

3. I am licensed as a professional engineer in the State of Colorado (Number 33329).

4. I am a member of the Society of Mining Engineers (Member Number 4028449) and the American Society of Civil Engineers (Member Number 271529).

5. I have practiced as a consulting mining engineer for 17 years since graduation from the Mackay School of Mines, University of Nevada, Reno, in 1995.

6. As a consulting engineer, I have completed mineral resource and mineral reserve estimations, and scoping, prefeasibility, and feasibility studies in industrial minerals, metals and coal, including potash, trona, nahcolite, phosphate, uranium, vanadium, molybdenum, cobalt and nickel. Extraction methods with which I have experience include room-and-pillar, longwall, drift-and-fill, open stoping, block caving, open pit, and solution mining.

7. I have consulted on projects for more than one dozen conventional underground and solution mines located in the western USA in the last 5 years, including potash.

8. I have read the definition of "qualified person" as defined in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-1000201), and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

9. I am responsible for preparation of the following sections of the Technical Reports titled *NI 43-101 Technical Report, Green River Potash Project, Grand County, Utah, USA*, dated 27 June 2012, 12 September 2012 (re-issue of 27 June 2012 report), and 10 October 2012 (re-issue of 12 September 2012 report): Sections 2.0 through 5.0, 13.0 through 23.0. I co-wrote Sections 1.0, 6.0, 10.0, and 25.0 through 27.0.

10. I have no financial involvement with Magna Resources Ltd., American Potash, LLC, or their affiliates.

11. I am independent of the issuer according to the criteria stated in Section 1.5 of NI 43-101.

12. I visited the property on 25 April 2012.

13. I have not had prior direct involvement with the Property that is the subject of the Technical Report.

14. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

15. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

16. Opinions and geological interpretations expressed herein are based on the information provided and the general experience and expertise possessed by the consultant. These opinions are offered up as further information for the consideration of the general public and are subject to change as new data are acquired and understood.

Dated this 10th day of October 2012.

"SIGNED AND SEALED"

Signature of Qualified Person *PROFESSIONAL SEAL*

Leo J. Gilbride, P.E.
Print name of Qualified Person

A.2 Statement of Certification by Author

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CERTIFICATE OF QUALIFIED PERSON

I, Vanessa Santos, P.G., do hereby certify that:

1. I am Chief Geologist with:

   Agapito Associates, Inc
   715 Horizon Drive, Suite 340
   Grand Junction, Colorado, 81506
   USA

2. I graduated with a Bachelors of Science degree in Geology in 1981 and a Masters of Science degree in Geology in 1983 from the University of Kentucky, Lexington, Kentucky, USA.

3. I am licensed as a professional geologist in Georgia (1664) and South Carolina (2403).

4. I am a registered member of the Society of Mining, Metallurgy and Exploration, Inc. (Member Number 405-8318).

5. I have practiced as a geologist for 28 years since graduation from the University of Kentucky and have 15 years of experience as a geologist and 13 years as a consulting geologist with industrial minerals, coal and aggregate mining and exploration companies.

6. As a geologist, I have worked in all facets of mining and exploration: evaluation, geologic reconnaissance, field mapping, drilling/coring, ore zone definition, geologic modeling and reserve estimation, quality assurance/quality control in minerals and commodities including potash, phosphate, trona, lithium, mica, feldspar, high purity quartz, and phlogopite, industrial sand, talc, limestone, dolomite, crushed stone, kaolin, ball and specialty clays and alluvial diamonds.

7. I have worked on multiple industrial minerals projects, including phosphate and potash, in North America, South America, and Africa in the last 5 years.

8. I have read the definition of "qualified person" as defined in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

9. I am responsible for preparation of the following sections of the Technical Reports titled *NI 43-101 Technical Report, Green River Potash Project, Grand County, Utah, USA,* dated 27 June 2012, 12 September 2012 (re-issue of 27 June 2012 report), and 10 October 2012 (re-issue of 12 September 2012 report): Sections 7.0 through 9.0, 11.0, 12.0, and 24.0. I co-wrote Sections 1.0, 6.0, 10.0, and 25.0 through 27.0.

10. I have no financial involvement with Magna Resources Ltd., American Potash, LLC, or their affiliates.

11. I am independent of the issuer according to the criteria stated in Section 1.5 of National Instrument 43-101.

12. I visited the property on 25 April 2012.

13. I have not had prior direct involvement with the Property that is the subject of the Technical Report.

14. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

15. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

16. Opinions and geological interpretations expressed herein are based on the information provided and the general experience and expertise possessed by the consultant. These opinions are offered up as further information for the consideration of the general public and are subject to change as new data are acquired and understood.

Dated this 10th day of October 2012.

"SIGNED AND SEALED"

Signature of Qualified Person *PROFESSIONAL SEAL*

Vanessa Santos, P.G.
Print name of Qualified Person