

**TECHNICAL REPORT**

**GEOLOGY AND MINERAL RESOURCES**

**UTAH POTASH PROJECT**  
**WHITE CLOUD, SALT WASH AND WHIPSAW AREAS**

**GRAND COUNTY, UTAH**

**USA**



**Salt Wash Potash Target Area**

**Prepared for**

**Mesa Exploration Corporation**  
**April 30, 2011**

**Dana Durgin, QP and AIPG Certified Professional Geologist #10364**

# Table of Contents

1.0	EXECUTIVE SUMMARY .....	1
1.1	Introduction .....	1
1.2	Geology and Mineralization.....	1
1.3	Exploration and Mining History .....	2
1.4	Drilling and Sampling .....	2
1.5	Metallurgical Testing .....	3
1.6	Mineral Resource Estimate .....	3
1.7	Interpretation and Conclusions .....	3
1.8	Recommendations .....	4
2.0	INTRODUCTION AND TERMS OF REFERENCE .....	4
3.0	RELIANCE ON OTHER EXPERTS .....	6
4.0	PROPERTY DESCRIPTION AND LOCATION .....	7
4.1	Location.....	7
4.2	Land Ownership.....	7
5.0	ACCESS, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY.....	16
6.0	HISTORY .....	17
6.1	Historical Resource Estimate .....	19
7.0	GEOLOGIC SETTING .....	20
7.1	Regional Geology.....	20
7.2	District Geology .....	22
7.3	Utah Potash Project Geology.....	22
7.3.1	Salt Wash Area Geology.....	23
7.3.2	Whipsaw Area Geology.....	24
7.3.3	White Cloud Area Geology.....	25
8.0	DEPOSIT TYPES .....	26
8.1	Brines .....	26
8.2	Evaporite Deposits.....	26
9.0	MINERALIZATION .....	27
9.1	Potential Potash Production From Brines.....	30
9.2	Potash Production Potential.....	31
9.2.1	White Cloud Area Potash.....	31
9.2.2	Salt Wash Area Potash.....	34
9.2.3	Whipsaw Area Potash.....	36
10.0	EXPLORATION.....	36
10.1	Surface Mapping .....	36
10.2	Sampling.....	37
10.3	Data Review.....	37
11.0	DRILLING.....	37
11.1	Drilling Summary.....	37
11.2	Oil and Gas Well Drilling .....	37
11.3	Core Drilling .....	38
12.0	SAMPLING METHOD AND APPROACH.....	38
12.1	Drill Mud Sampling .....	38

12.2	Core Sampling.....	38
13.0	SAMPLE PREPARATION, ANALYSIS AND SECURITY .....	38
13.1	Sample Preparation and Analytical Procedures .....	38
13.2	Security.....	38
14.0	DATA VERIFICATION .....	38
14.1	Quality Control.....	39
14.2	Historic Drilling Survey Data .....	39
15.0	ADJACENT PROPERTIES .....	39
16.0	MINERAL PROCESSING AND METALLURGICAL TESTING .....	39
16.1	Ore Description .....	39
16.2	Metallurgy .....	40
17.0	MINERAL RESOURCE ESTIMATE.....	40
18.0	MINERAL RESERVE ESTIMATE.....	40
19.0	OTHER RELEVANT DATA AND INFORMATION .....	40
20.0	INTERPRETATIONS AND CONCLUSIONS.....	41
21.0	RECOMMENDATIONS.....	41
21.1	Utah Potash Project Budget 2011.....	42
22.0	REFERENCES.....	43
23.0	DATE AND SIGNATURE PAGE.....	45
24.0	CERTIFICATE OF AUTHOR .....	46

### **LIST OF TABLES**

Table 4.2a	Salt Wash Area Potash Prospecting Applications (Gatton, 2008a).....	10
Table 4.2b	Whipsaw Area Potash Prospecting Applications (Gatton, 2008b)....	11
Table 4.2c	White Cloud Area Potash Prospecting Applications (Gatton, 2008b).....	12
Table 7.3	Map Legend Salt Wash, Whipsaw and White Cloud Areas.....	24
Table 9.1a	Big Flat Artesian Wells.....	30
Table 9.1b	Oil & Gas Well Mineral Content in Brine .....	30
Table 9.2.1a	Potash Intervals Underlying White Cloud Area.....	31
Table 9.2.1b	White Cloud Well Data.....	32
Table 9.2.2	Salt Wash Well Data.....	36
Table 9.2.3	Whipsaw Well Data.....	36

### **LIST OF FIGURES**

Figure 4.1	Utah Potash Project Location Map.....	8
Figure 4.2a	Utah Potash Project Land Status Map .....	9
Figure 4.2b	White Cloud Area Potash Exploration Applications Map.....	13
Figure 4.2c	Salt Wash Area Potash Exploration Applications Map.....	14
Figure 4.2d	Whipsaw Area Potash Exploration Applications Map.....	15
Figure 6.0	Utah Potash Infrastructure and Wells.....	18
Figure 7.1	Regional Geology.....	21
Figure 7.3a	Generalized Stratigraphic Column, Utah Potash Project Areas.....	23
Figure 7.3b	Geologic Map of Salt Wash and Whipsaw Potash Permit Areas.....	24
Figure 7.3c	Geologic Map of White Cloud Area.....	25

Figure 9.0a	Paradox Basin Potash Distribution Map (Wiegand, 1981).....	27
Figure 9.0b	Paradox Evaporite Cycle and Log Signatures (Allen, 2009).....	28
Figure 9.0c	Paradox Evaporite Cycles Schematic Section (Wiegand, 1981).....	28
Figure 9.0d	Southwest Utah Potash Potential Map.....	29
Figure 9.2.1	Log of Southern Natural #1 Well – Potash and Brine Intervals.....	33
Figure 9.2.2a	Salt Wash Area South – Log Federal 1-26, Cycle 5.....	34
Figure 9.2.2b	Salt Wash Area South – Log Federal 1-26, Cycle 13.....	35

## **1.0 EXECUTIVE SUMMARY**

This technical report was prepared at the request of Mesa Exploration Corporation (“Mesa”) a Canadian public corporation, listed on the TSX-V exchange with the symbol MSA, in connection with its filings with British Columbia and Alberta Securities Commissions and the TSX Venture Exchange. Mesa is also listed on the OTCBB as MSAJF. The report was written in compliance with disclosure and reporting requirements set forth in the Canadian Securities Administrators’ National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1.

The property was acquired in 2008 through the filing of applications for potash exploration permits. There are no underlying agreements with other property owners.

The author has reviewed all the available data provided by Mesa Exploration Corporation and finds no reason to doubt the validity of the data.

### **1.1 Introduction**

The Utah Potash Project is located in Grand County, Utah, north and west of Moab. There are three non-contiguous groups of potash applications (74,661.64 total acres) located in townships T25 & 26S and R19 & 20E (White Cloud), T23S, R17 & 18E (Salt Wash), and T22S, R20E (Whipsaw).

### **1.2 Geology and Mineralization**

The Utah Potash properties are underlain by a thick series of Mesozoic and Paleozoic sedimentary rocks which make up the Paradox Basin of the north central Colorado Plateau. The Paradox Basin is a large sedimentary basin with a NW-SE long axis. Economic interest in this area has centered on oil and gas production from strata of Devonian, Mississippian and Pennsylvanian age. Regional subsidence in early Pennsylvanian time created a large sedimentary basin with a restricted marine environment, resulting in multiple thick deposits of evaporate minerals including salt and potash. This Pennsylvanian stratigraphic unit is named the Paradox Member of the Hermosa Formation, which contains salt and potash and interbedded dolomite, shale, siltstone. There are 29 salt and potash horizons in the Paradox, of which several are potentially minable. Only one potash mine has been developed thus far, the Cane Creek Mine, about 6 miles southwest of Moab, Utah. It started as an underground mine in 1965, was converted to a solution mine in the early 1970’s and is still in production.

The geology in the subsurface is known from logs of a large number of wells drilled for oil and gas exploration. Some wells encountered super-saturated brines containing high amounts of potash, sodium chloride, magnesium chloride, lithium, bromine, boron and other potentially payable minerals. Only a few holes were drilled specifically to test these brines and all supported the conclusion that these brines could be an economically important resource. These brines are one of Mesa Exploration’s targets. The others are the potash horizons themselves. The principal targeted potash horizons are Cycle 5 and

9, currently being mined at Cane Creek, and Cycle 13, which may be feasible solution mining targets in all three of Mesa's Utah Potash Project properties.

### **1.3 Exploration and Mining History**

The Paradox Basin area, which includes the Utah Potash Project, has been explored for oil and gas for quite some time. The earliest discoveries of potash in the area were made in 1922 (Whipsaw area) in oil and gas wells and in 1924 near Moab, but the correlation of the beds and the extent and richness of the deposits were not recognized until the 1950's. The Seven Mile and McRae (now held by American Potash LLC), Salt Wash and White Cloud potash target areas, west and northwest of Moab, were quickly identified, but the White Cloud area was considered to be the most attractive target. Potash in the Whipsaw area was being investigated as early as 1942 and in again in 1956. Further exploration lead to the development in 1965 of the Cane Creek potash mine in a lower elevation area adjacent to the Colorado River.

Brines were commonly encountered in these wells, but none of the wells was of economic significance (for brines) until in 1962 when the Southern Natural Gas Company drilled a well (Long Canyon Unit #1 well) which encountered a most substantial flow of high density brine at a depth of 6,013 feet (1833m). In another nearby hole brine was encountered at 6013 feet (1833m) and it was recorded that artesian brine flow was so strong that drilling had to be suspended after penetrating only 6 feet (2m) of the 28 foot (8.5m) thick pay zone. The zone of supersaturated brines extends for nearly 100 miles (62.5 km) northwest from Moab. The economic and exploration significance of the brines is discussed in "Technical Report, Geology and Mineral Resources, Green Energy Project, Grand County, Utah" (Durgin, 2011).

In 1976 Robert Hite of the USGS published his Open File Report 76-755, in which he used well log data to determine the thickness and distribution of the Cycle 13 halite bed (and others). This and other reports eventually sparked renewed interest in the potash potential of the area and caused Sweetwater Resources to file applications for exploration permits for the 7 Mile-Macrae area early in 2008, later acquired by American Resources LLC. Mesa Exploration also filed applications in 2008 for the White Cloud, Salt Wash and Whipsaw areas.

### **1.4 Drilling and Sampling**

Mesa Exploration has done no drilling on the Utah Potash properties. In the general area of the three properties, there have been more than 200 oil and gas wells completed over the years. Many of them penetrated the Paradox formation and intersected its potash beds and brines. Lithologic logs, geophysical and other data (including pressures and temperatures for some) for nearly all of these wells are available from the Utah Geologic Survey's log library and via the internet. Very little information has been preserved regarding drilling or sampling techniques used in the drilling of these wells. However location data are well preserved.

## 1.5 Metallurgical Testing

There has been no metallurgical or process testing done by Mesa Exploration. However, the Cane Creek potash mine, immediately southeast of the White Cloud property, has been in operation for 45 years using proven techniques for potash recovery. Potash and other products are readily recovered from similar brines in many locations around the world using similar procedures. No significant metallurgical problems are anticipated, but the commonly used methods may need to be adjusted slightly to meet the needs of these specific brines or solution mined fluids.

## 1.6 Mineral Resource Estimate

There are no NI 43-101 compliant resources or reserves at the Utah Potash Project.

There are over 200 oil and gas test wells in the overall project area that define the presence of a very large tonnage of potash in several beds underlying the area controlled by Mesa Exploration. One 1964 letter suggests that there may be 9 million tons (8.16m tones) of K<sub>2</sub>O under the White Cloud area in just one of the several beds. The available oil and gas well data suggests that the Salt Wash and Whipsaw areas may have a similar potential.

Regarding the brines at White Cloud, a letter from Garrett in 1966 states that “Assuming a closed aquifer, based on volumetric estimates limited to the six by eight mile area of established brine flows, in my opinion, the proved brine reserves are 15 million barrels. Here, proved reserves are used as in the petroleum industry to mean that they have an 85% chance, or more, of being recovered.” This of course is quite different from current usage of the term “reserves” in the mining industry, thus these figures cannot be relied upon in that sense, and are not NI 43-101 compliant.”

Once again, all of these are pre-2001 historical resource estimates and they do not include recovery factors or costs, thus readers are cautioned that a Qualified Person has not done sufficient work to classify the historical estimates as current mineral resources, the issuer is not treating the historical estimate as current mineral resources and this historical estimate should not be relied upon. This is more of an indication of the area’s potential than an actual resource in mining industry terms.

## 1.7 Interpretation and Conclusions

The author considers that the data provided by Mesa Exploration provide an accurate representation of the Utah Potash Project. The geology and controls of mineralization in the immediate area of the property are reasonably well known as a result of surface mapping and extensive oil and gas drilling. The presence of the adjacent Cane Creek mine which has been producing potash for 45 years, using the same process envisioned for mining potash at the Utah Potash Project, indicates that solution mining of potash there should be feasible. The recovery of potash and other products from the supersaturated brines should also be straightforward since similar brines are a primary

source of potash, lithium and other products. While not yet sufficiently well defined for mining purposes, both the brine and in-situ potash resources appear to be quite large, based on the oil and gas well data, and on brine studies from the 1960's and 1970's.

## **1.8 Recommendations**

Mesa Exploration should acquire and study many of the oil and gas well logs to better define the distribution and thickness of the target stratigraphic horizons. Chemical analyses are not available for all holes but will be available for some of them. Acquisition and reprocessing of the many generations of seismic data generated in the past, with emphasis on the potash and brine horizons, will aid in development of a 3-D geologic model. Preliminary process engineering, and reservoir modeling of the brines needs to be done regarding recoveries of potash and other commodities from the concentrated solutions and brines.

The drilling of a well for exploration, sample collection and possible production should be considered in each of the three areas. It should be designed to sample the lithium-bearing Clastic Zone 3 brine and the potash in the Cycle #5, #9 and #13 strata, which are the best known, shallow depth target horizons. Cycle #5 is currently being mined at Intrepid Minerals' nearby Cane Creek potash mine

The budget for the planned 2011 program at the Utah Potash Project is \$30,000, largely for additional research. Upon approval of the applications, a more comprehensive program is anticipated. The program would cost approximately \$6.5 million and would include 3D modeling of the potash horizons and drilling at each of the three project areas.

## **2.0 INTRODUCTION AND TERMS OF REFERENCE**

Dana Durgin has prepared this technical report for the Utah Potash Project at the request of Mesa Exploration Corporation.

This Technical Report will satisfy Mesa's obligation to file a technical report as public information in connection with the Utah Potash Project, as required under the policies of the various Canadian provincial Securities Commissions and the TSX Venture Exchange. This report is written in compliance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101, Companion Policy 43-101CP and Form 43-101. Work on the property by Mesa Exploration to date has been limited to a thorough due diligence effort, historical data compilation and property acquisition.

The author reviewed pertinent technical reports and data relative to the regional and property geology, land status, history of the district and project areas, past exploration efforts and results, methodology, interpretations, and other data necessary to the understanding of the project, sufficient to produce this report. The author carried out such independent investigations of the data during the due diligence period and of the property in the field, as has been deemed necessary in the professional opinion of the

author, so that he might reasonably rely on this information. The property was visited in February 2011. The author has worked on other projects in southeastern Utah in the past and is familiar with the regional and local geology.

The drilling, analytical and geologic data required to produce this report were generated in several phases over nearly 60 years from the 1950's. The available data has been acquired by Mesa Exploration from many sources, as noted in Section 22.

As mandated by NI 43-101 requirements, the observations, conclusions and recommendations of the author in this report are derived from comprehensive reviews of the Utah Potash Project database and a site inspection on February 21 and 22, 2011. This site inspection was designed to confirm geologic relationships, geographical locations of land holdings and access routes at the project.

The author believes that the data presented to him by Mesa Exploration Corporation are a reasonable and accurate representation of the Utah Potash Project.

Units of measure, conversion factors and currency used in this report are as follows:

**Linear Measure**

1 inch = 2.54 centimeters = 254 millimeters  
 1 foot = 0.3048 meter  
 1 yard = 0.9144 meter  
 1 mile = 1.6 kilometers

**Area Measure**

1 acre = 0.4047 hectare  
 1 square mile = 640 acres, or 259 hectares

**Capacity Measure (liquid)**

1 US gallon = 4 quart or 3.785 liters

**Weight**

1 short ton = 2000 pounds = 0.907 tonne  
 1 pound = 16 oz = 0.454 kg = 14.5833 troy ounces

**Analytical Values**

1%	Percent	Grams per Metric Tonne	Troy Ounces per Short Ton
1%	1%	10,000	291.667

<b>1 gr/tonne</b>	<b>0.0001%</b>	<b>1</b>	<b>0.0291667</b>
<b>1 oz troy/ton</b>	<b>0.003429%</b>	<b>34.2857</b>	<b>1</b>
<b>100 ppb</b>			<b>0.0029</b>
<b>100 ppm</b>			<b>2.917</b>

### Commonly used abbreviations and acronyms

AA	atomic absorption spectrometry
Ag	silver
Au	gold
CIM	Canadian Institute of Mining, Metallurgical and Petroleum
core	diamond drilling method, producing a cylinder of rock
FA-AA	fire assay with an atomic absorption finish
g	grams
g/t Ag	grams of silver per metric tonne, equivalent to ppm
g/t Au	grams of gold per metric tonne, equivalent to ppm
g/t Au-eq	grams per metric ton expressed in gold-equivalent.
ha	hectares
m	meters
mm	millimeters
km	kilometers
ppm	parts per million
RC	reverse circulation drilling method
t	tonnes
tpd	tonnes per day

All monetary figures used in this report are US Dollars.

### 3.0 RELIANCE ON OTHER EXPERTS

The author's principal task was to review and compile all available data into this report. The geologic and drill hole data was compiled from published reports, oil well logs from the Utah Geological Survey library and other private data from Mesa Exploration Corporation as noted in the References section.

After his review, it is the opinion of the author that the data provided by Mesa Exploration Corporation were collected in accordance with standard industry practices, and there is no reason to doubt its validity. Receipts from the US Bureau of Land Management demonstrate that the lease applications are current and valid.

Conclusions regarding the Utah Potash Project and the recommendations presented in this report are those of the author, based on his review of the data and his extensive

personal experience as a geologist in the mining industry, and do not necessarily reflect those of Mesa Exploration Corporation.

## **4.0 PROPERTY DESCRIPTION AND LOCATION**

### **4.1 Location**

The Utah Potash Project is located in Grand County, southeastern Utah, and consists of three separate groups of potash concession applications – the Salt Wash, Whipsaw and White Cloud areas. All are located west and north of the town of Moab.

The Salt Wash area is located in Township 23 South, Ranges 17 and 18 East, a few miles southwest of Crescent Junction and 15 miles southeast of Green River, in Grand County, Utah. It is reached by driving west from Crescent Junction on I-70 for 7 miles (11.3 km) and turning south an additional 6 miles (9.7 km) to the NE corner of the property. It can also be reached by driving south from Crescent Junction toward Moab for 14 miles (22.5 km) to the Moab airport and turning west for 12 miles (19.3 km) to the eastern edge of the property.

The Whipsaw area is located in Township 22 South, Range 21 East, about 15 miles (24.1 km) east and 6 miles (9.7 km) north of the Salt Wash area. It is reached by driving south from Crescent Junction for 5 miles (8 km) and turning eastward for 4 additional miles (6.4 km) to the west edge of the property.

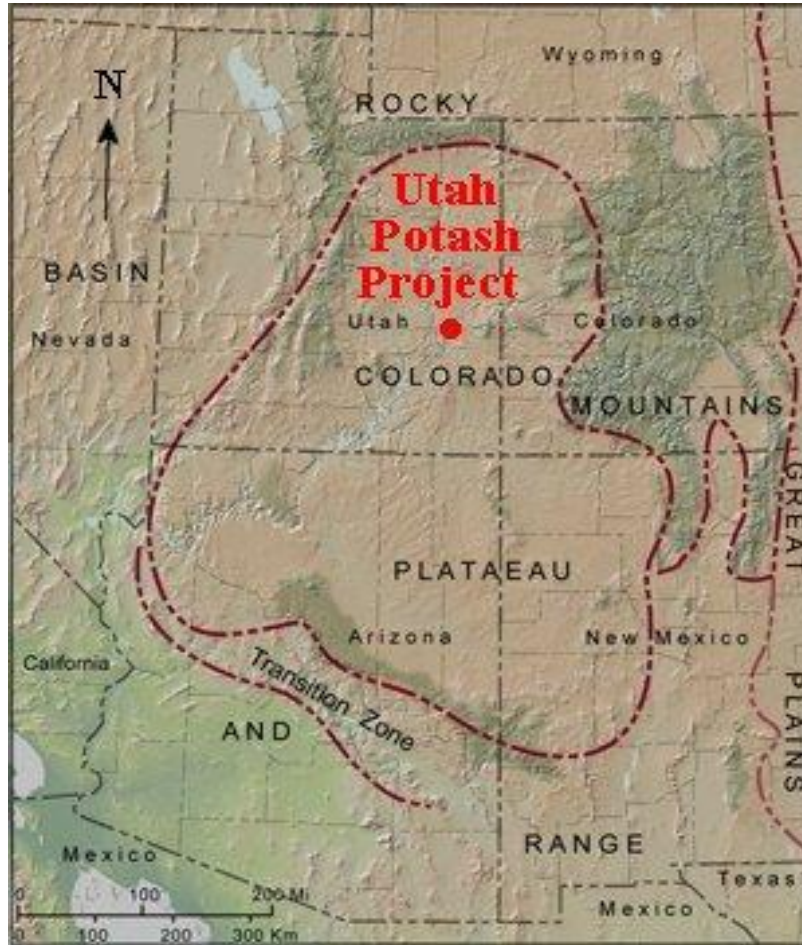
The White Cloud area is centered about 12 miles (19.3 km) west of the town of Moab. It is reached by driving northwest from Moab approximately 10 miles (16.1 km), and turning southwest on the road with signs pointing to Dead Horse Point State Park, and Canyonlands National Park, for about 15 miles (24.1 km). It can also be reached via a steep, narrow dirt road heading west from the Colorado River 1.5 miles (2.4 km) north of the Intrepid Minerals potash mine site.

Driving time to each of the Salt Wash, Whipsaw and White Cloud properties is approximately 30 minutes from Moab. The nearest commercial airport is at Grand Junction, Colorado, approximately a 1.5 hour drive to the north and east.

### **4.2 Land Ownership**

Land in the area of the Utah Potash Project is predominantly owned by the public and managed by the federal government, administered by the U.S. Bureau of Land Management (BLM) and by the National Park Service (Canyonlands National Park) and the State of Utah (Dead Horse Point State Park), south of the White Cloud area and Arches National Park southeast of the Whipsaw area. For potash resources, federal leases are required. Initially exploration permit applications are filed, which carry the

right to conduct exploration, including drilling and any other activities that are warranted to prove the resource potential of the permitted land. These are good for 2 years, cost \$0.50 per acres and may be renewed. These are eventually approved and upon discovery and pending production, they may be converted to leases. Potash exploration permit



**Figure 4.1 Utah Potash Project Location Map.**

applications have been filed with the BLM Solid Mineral Leasing System. The Salt Wash area consists of nine (9) exploration permit applications covering a total of 21,183.53 acres (8573 ha). See Table 4.2a and Figure 4.2d.

The Whipsaw area is covered by eight (8) exploration permit applications covering a total of 18,062.31 acres (7309.8 ha). See Table 4.2b and Figure 4.2e

The White Cloud area is held by seventeen (17) exploration permit applications covering a total of 35,509.8 acres (14,370.8 ha). See Table 4.2c and Figure 4.2c. Canyonlands National Park and Dead Horse Point State Park are located 1 to 2 miles (1.6 to 3.2 km) south of the southern boundary of the White Cloud area. The Cane Creek potash mine and evaporation ponds (Intrepid Minerals) are immediately east of the State Park, and

southeast of the White Cloud area.

A check of the US Bureau of Land Management LR 2000 land records shows all the potash exploration applications to be valid and current.

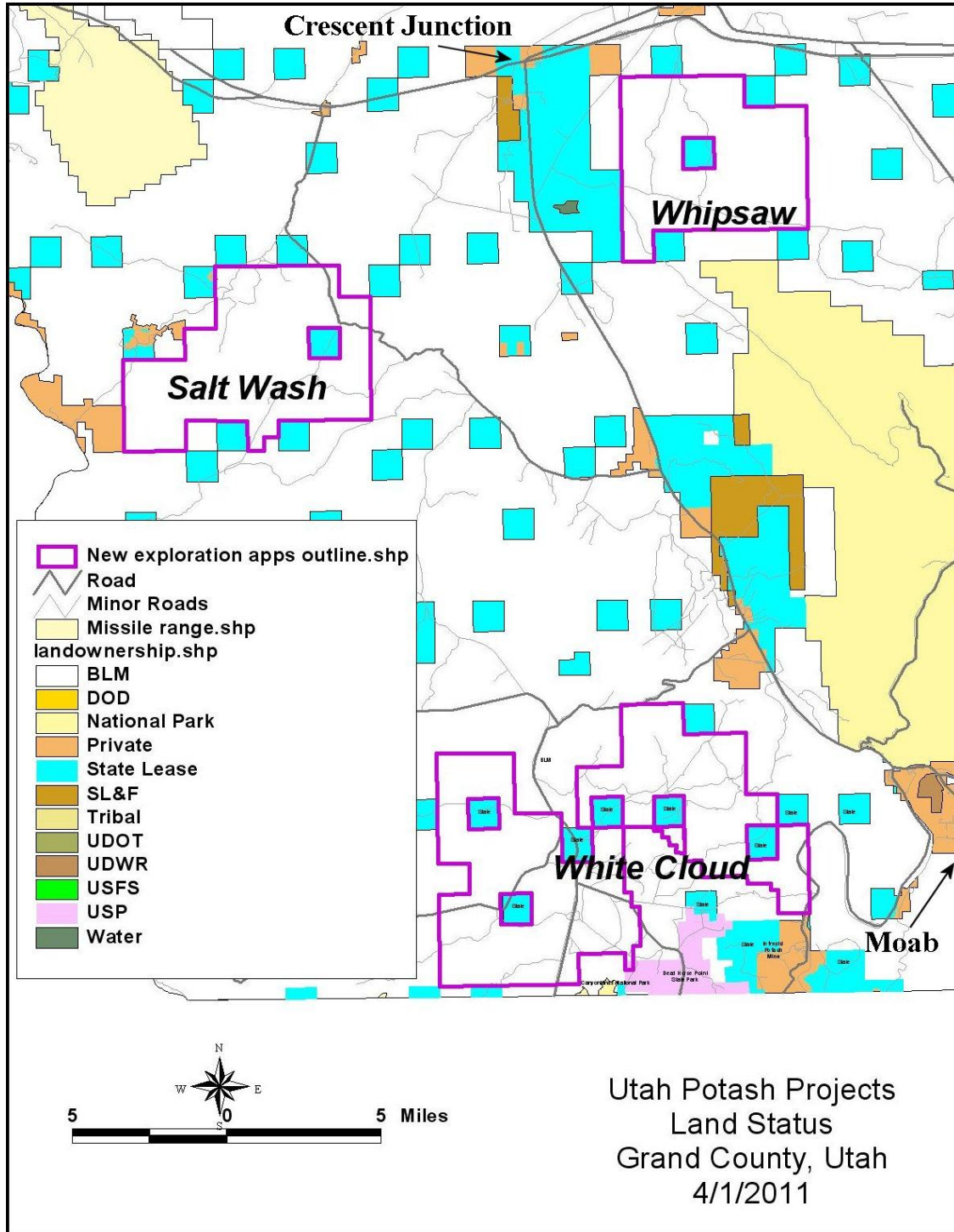


Figure 4.2a Utah Potash Project Land Status Map

**Table 4.2a Salt Wash Area Potash Prospecting Applications (Gatton, 2008a)**

Serial #	Division	Section	Township	Range	County	Acreage
86377	All	1	23S	17E	Grand	1340.2
	All	12	23S	17E	Grand	
86378	All	13	23 S.	17 E.	Grand	2,560
	All	14	23 S.	17 E.	Grand	
	All	21	23 S.	17 E.	Grand	
	All	22	23 S.	17 E.	Grand	
86379	All	23	23 S.	17 E.	Grand	2,560
	All	24	23 S.	17 E.	Grand	
	All	25	23 S.	17 E.	Grand	
	All	26	23 S.	17 E.	Grand	
86380	All	27	23 S.	17 E.	Grand	2,560
	All	28	23 S.	17 E.	Grand	
	All	33	23 S.	17 E.	Grand	
	All	34	23 S.	17 E.	Grand	
86382	All	4	23 S.	18 E.	Grand	1,981.63
	All	5	23 S.	18 E.	Grand	
	All	6	23 S.	18 E.	Grand	
86383	All	7	23 S.	18 E.	Grand	2,546.40
	All	8	23 S.	18 E.	Grand	
	All	9	23 S.	18 E.	Grand	
	All	10	23 S.	18 E.	Grand	
86384	All	15	23 S.	18 E.	Grand	2,535.86
	All	17	23 S.	18 E.	Grand	
	All	18	23 S.	18 E.	Grand	
	All	19	23 S.	18 E.	Grand	
86385	All	20	23 S.	18 E.	Grand	2,560
	All	21	23 S.	18 E.	Grand	
	All	22	23 S.	18 E.	Grand	
	All	27	23 S.	18 E.	Grand	
86386	All	28	23 S.	18 E.	Grand	2,539.44
	All	29	23 S.	18 E.	Grand	
	All	30	23 S.	18 E.	Grand	
	All	31	23 S.	18 E.	Grand	
Total=						21183.53

**Table 4.2b Whipsaw Area Potash Prospecting Applications (Gatton, 2008c)**

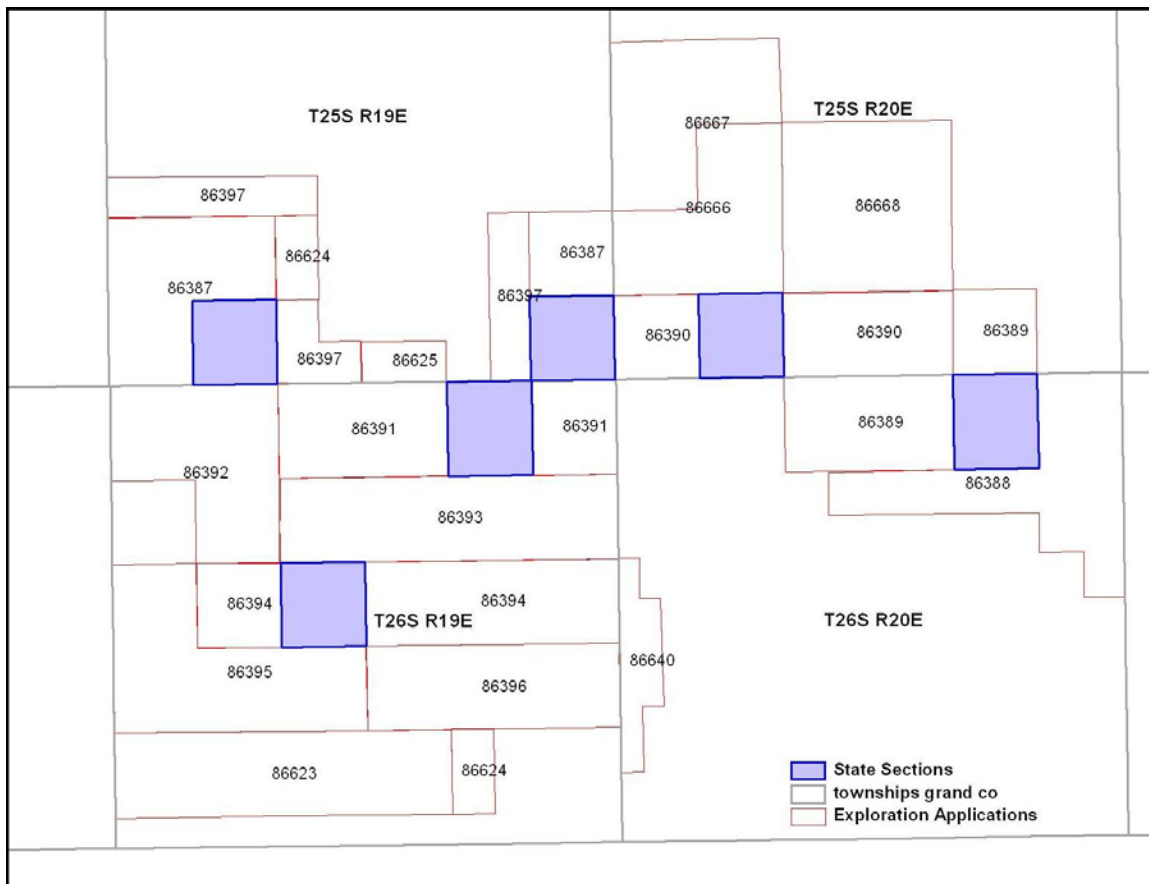
Serial #	Division	Section	Township	Range	County	Acreege
86369	All	3	22 S.	20 E.	Grand	1,951.08
	All	4	22 S.	20 E.	Grand	
	All	5	22 S.	20 E.	Grand	
86370	All	6	22 S.	20 E.	Grand	1,930.75
	All	7	22 S.	20 E.	Grand	
	All	8	22 S.	20 E.	Grand	
86371	All	9	22 S.	20 E.	Grand	2,560
	All	10	22 S.	20 E.	Grand	
	All	11	22 S.	20 E.	Grand	
	All	12	22 S.	20 E.	Grand	
86372	All	13	22 S.	20 E.	Grand	2,560
	All	14	22 S.	20 E.	Grand	
	All	15	22 S.	20 E.	Grand	
	All	17	22 S.	20 E.	Grand	
86373	All	18	22 S.	20 E.	Grand	1,922.12
	All	19	22 S.	20 E.	Grand	
	All	20	22 S.	20 E.	Grand	
86374	All	21	22 S.	20 E.	Grand	2,560
	All	22	22 S.	20 E.	Grand	
	All	23	22 S.	20 E.	Grand	
	All	24	22 S.	20 E.	Grand	
86375	All	25	22 S.	20 E.	Grand	2,560
	All	26	22 S.	20 E.	Grand	
	All	27	22 S.	20 E.	Grand	
	All	28	22 S.	20 E.	Grand	
86376	All	29	22 S.	20 E.	Grand	1,924.36
	All	30	22 S.	20 E.	Grand	
	All	31	22 S.	20 E.	Grand	

TOTAL ACRES: 17,968.31

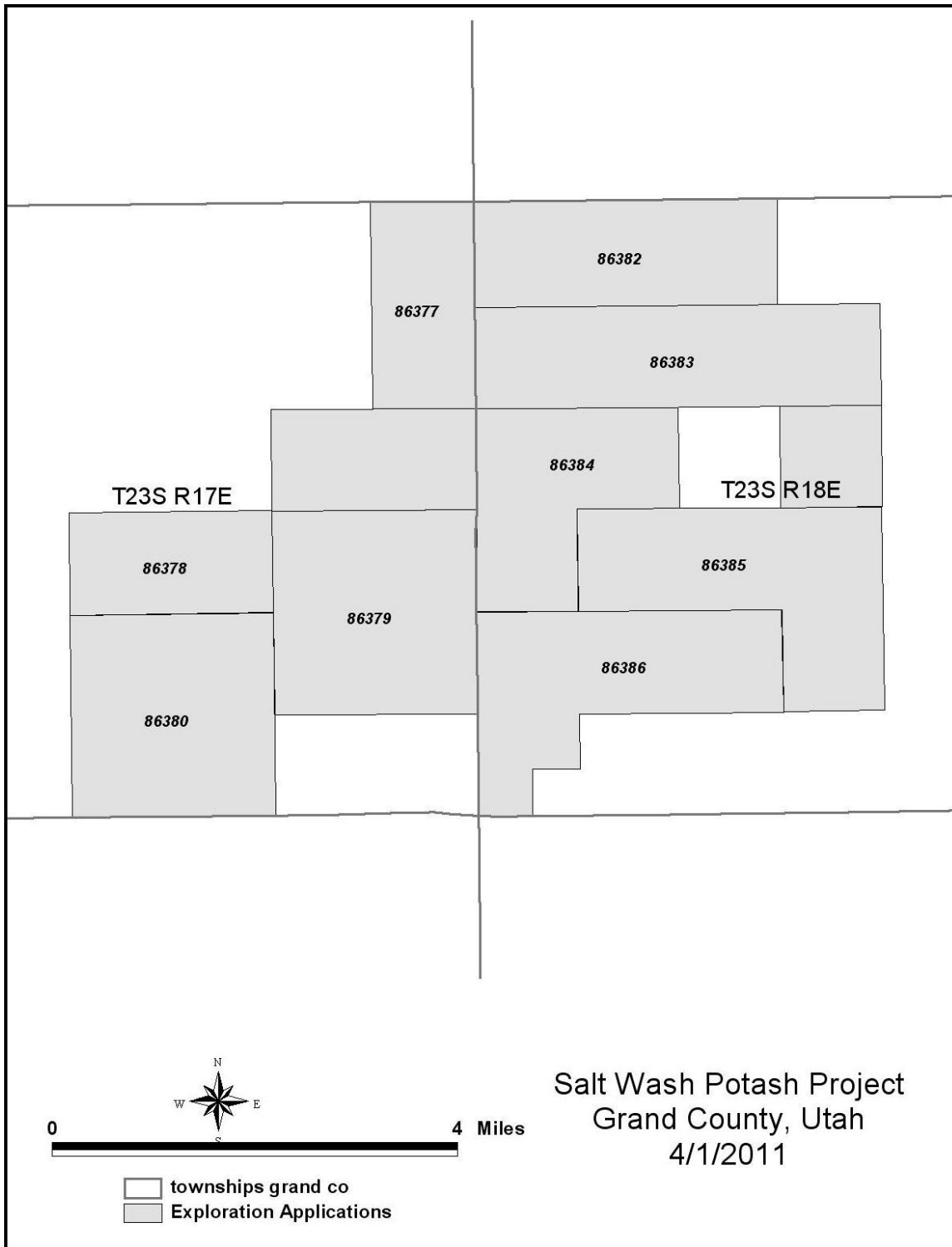
**Table 4.2c White Cloud Area Potash Prospecting Applications (Gatton, 2008b)**

Serial #	Division	Section	Township	Range	County	Acreage
86387	All	25	25 S.	19 E.	Grand	2,551.44
	All	29	25 S.	19 E.	Grand	
	All	30	25 S.	19 E.	Grand	
	All	31	25 S.	19 E.	Grand	
86389	All	35	25 S.	20 E.	Grand	2,072.28
	All	3	26 S.	20 E.	Grand	
	All	4	26 S.	20 E.	Grand	
86390	All	31	25 S.	20 E.	Grand	1,921.16
	All	33	25 S.	20 E.	Grand	
	All	34	25 S.	20 E.	Grand	
86391	All	1	26 S.	19 E.	Grand	2,145
	All	3	26 S.	19 E.	Grand	
	All	4	26 S.	19 E.	Grand	
86392	All	5	26 S.	19 E.	Grand	2,068
	All	6	26 S.	19 E.	Grand	
	All	8	26 S.	19 E.	Grand	
86393	All	9	26 S.	19 E.	Grand	2,560
	All	10	26 S.	19 E.	Grand	
	All	11	26 S.	19 E.	Grand	
	All	12	26 S.	19 E.	Grand	
86394	All	13	26 S.	19 E.	Grand	2,560
	All	14	26 S.	19 E.	Grand	
	All	15	26 S.	19 E.	Grand	
	All	17	26 S.	19 E.	Grand	
86395	All	18	26 S.	19 E.	Grand	2,560
	All	19	26 S.	19 E.	Grand	
	All	20	26 S.	19 E.	Grand	
	All	21	26 S.	19 E.	Grand	
86396	All	22	26 S.	19 E.	Grand	1,920
	All	23	26 S.	19 E.	Grand	
	All	24	26 S.	19 E.	Grand	
86397	S2	19	25 S.	19 E.	Grand	1,920
	S2	20	25 S.	19 E.	Grand	
	SW4	21	25 S.	19 E.	Grand	
	W2, SE4	33	25 S.	19 E.	Grand	
	E2	26	25 S.	19 E.	Grand	
	E2	35	25 S.	19 E.	Grand	
86623	All	27	26 S.	19 E.	Grand	2,559
	All	28	26 S.	19 E.	Grand	
	All	29	26 S.	19 E.	Grand	
	All	30	26 S.	19 E.	Grand	
86624	W 1/2	28	25 S.	19 E.	Grand	1,278.00
	All	7	26 S.	19 E.	Grand	
	W 1/2	26	26 S.	19 E.	Grand	

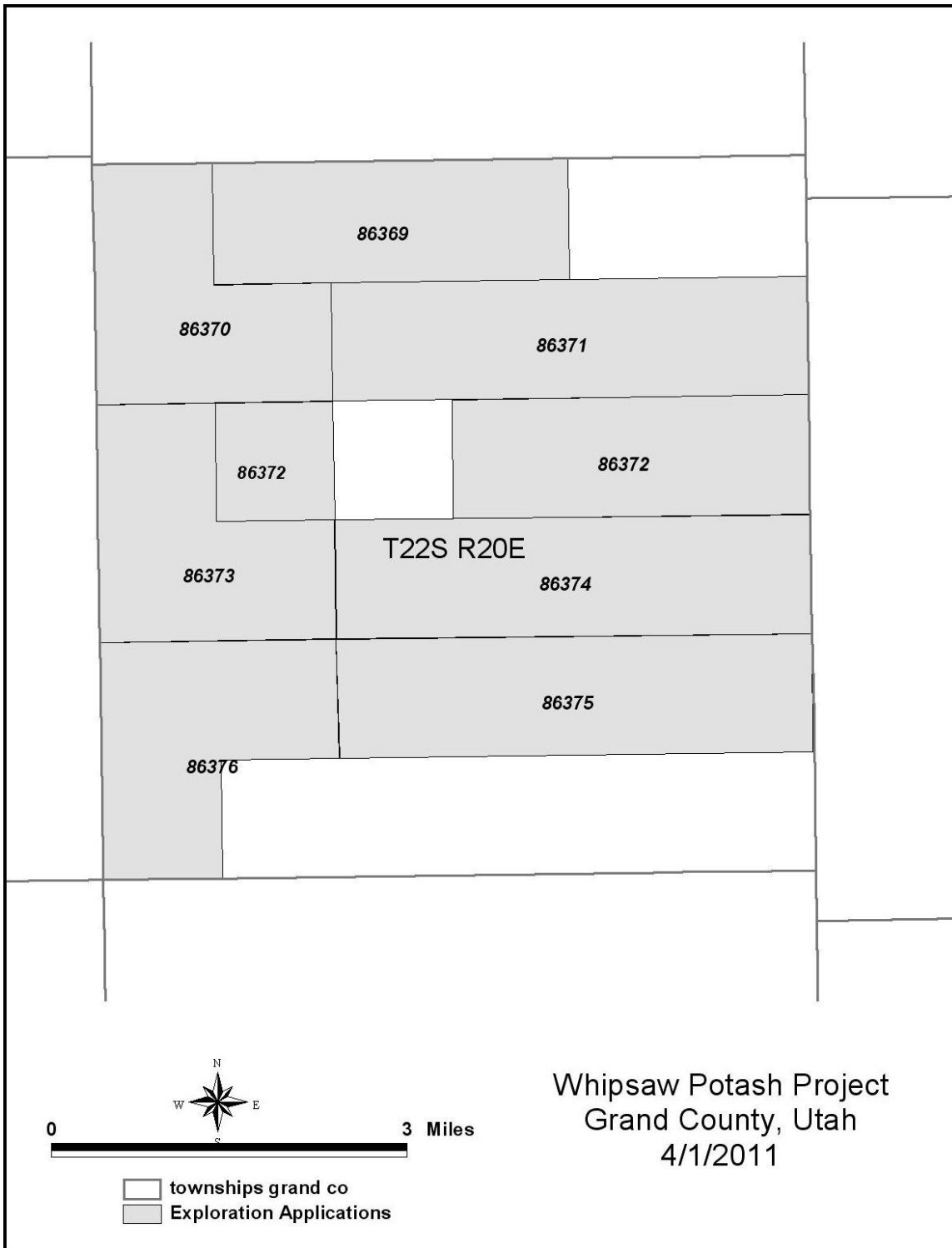
86625	W 1/2	26	25 S.	19 E.	Grand	2,400
	All	27	25 S.	19 E.	Grand	
	E 1/2	28	25 S.	19 E.	Grand	
	NE 1/4	33	25 S.	19 E.	Grand	
	All	34	25 S.	19 E.	Grand	
	W 1/2	35	25 S.	19 E.	Grand	
86640	E1/2SW1/4, Lots 1-4	18	26 S.	20 E.	Grand	591.56
	E1/2NW1/4, NE1/4SW1/4, Lots 1-4	19	26 S.	20 E.	Grand	
	Lots 1, 2	30	26 S.	20 E.	Grand	
86666	All	20	25 S.	20 E.	Grand	1922.08
	All	29	25 S.	20 E.	Grand	
	E1/2, E1/2W1/2, Lots 1-4	30	25 S.	20 E.	Grand	
86667	All	17	25 S.	20 E.	Grand	1921.28
	E1/2, E1/2W1/2, Lots 1-4	18	25 S.	20 E.	Grand	
	E1/2, E1/2W1/2, Lots 1-4	19	25 S.	20 E.	Grand	
86668	All	21	25 S.	20 E.	Grand	2560
	All	22	25 S.	20 E.	Grand	
	All	27	25 S.	20 E.	Grand	
	All	28	25 S.	20 E.	Grand	
Total=						35,509.80



**Figure 4.2b White Cloud Area Potash Applications Map**



**Figure 4.2c Salt Wash Area Applications Map**



**Figure 4.2d Whipsaw Area Potash Applications Map**

## **5.0 ACCESS; CLIMATE; LOCAL RESOURCES; INFRASTRUCTURE; AND PHYSIOGRAPHY**

The three parts of Mesa Exploration Corporation's Utah Potash Project are easily accessible to points within a few miles from I-70 near Crescent Junction or from state highway 191, north and west of Moab.

The Salt Wash Area is reached from the north by driving approximately 7 miles (11.3 km) west from Crescent Junction on I-70 and turning south on Ruby Ranch Road. It is then approximately 10 miles (16.1 km) to the northern border of the property. It is also accessible from Highway 191 via the Blue Hills Road which goes westward from the Moab airport. The east edge of the property is 12 miles (19.3 km) from 191. Within the property are a network of dirt ranch and oilfield access roads, some usable only by four wheel drive vehicles.

The Whipsaw Area is accessible by a series of ranch and oilfield service roads from both I-70 and Highway 191 within 5 miles (8 km) east and south of Crescent Junction. As with the Salt Wash area, some are usable only by four wheel drive vehicles.

The White Cloud Area is reached by an all weather paved road, highway 313, which turns off highway 191 approximately 10 miles (16.1 km) north from Moab. This is the access road to Canyonlands National Park, and a branch of it is the access road to Dead Horse Point State Park. The center of the project area has numerous oil pump jacks and storage tanks, all of which are serviced by a network of all weather dirt roads. The project is within Township 26 South, Ranges 19 and 20 East.

In all three areas the terrain is dominated by mesas and gently rolling hills whose elevation is from 4500 to 6000 feet (1372 to 1829m), cut by a series of steep canyons around the margins. In many areas the topography is such that evaporation ponds for extracting potash from solution could be easily constructed.

Much of the mesa areas are open flats with sparse sagebrush and grasses. Approximately 20% of the area is covered by open juniper-pinion forest typical of the region. BLM maps refer to the vegetation as "desert scrub" (mostly in canyons) and "grassland". The land supports typical sparse desert fauna including mule deer, pronghorn, coyote, rabbits, foxes, rodents and reptiles. Species of potential concern which may be present in the general area are the Mexican spotted owl, the burrowing owl, golden eagles and desert bighorn sheep. There are no perennial streams. Most of the land is only marginally suitable for ranching.

The climate is high semi-desert with about 10 inches (33cm) of rainfall per year, mainly as sparse winter snow and summer thunderstorms. Summers are hot and dry although temperatures rarely exceed 100 degrees F (38 C). Winters are moderate with temperatures rarely less than 10 degrees F (-12 C) and modest snowfall accumulation. The area receives approximately 300 days of sunshine annually. The area is suitable for year-round operations.

The nearest source of labor, accommodation and supplies is Moab (population 5500), a half hour drive away. Grand Junction, Colorado, is the nearest city with a commercial airport, about 1.5 hours from the project. There is also a BLM field office in Moab. The Intrepid potash mine is a few miles to the southwest of Moab, and it has an active railroad spur line which passes near Moab and within a few miles of all three properties.

## 6.0 HISTORY

The Paradox Basin area, which includes the Utah Potash Project, has been explored for oil and gas for quite some time. Figure 6.0 shows oil and gas wells as red dots. There are several wells within each of the three potash application areas, and many others nearby. Logs of these wells are available at the Utah Geologic Survey library. The earliest discoveries of potash were made in 1922 a few miles southeast of Crescent Junction (Evans, 1956), but the correlation of the beds and the extent and richness of the deposits were not recognized until the 1950's. In 1953 Delhi Oil Corporation explored the Seven Mile area, seven miles (11.2 km) NW of Moab, drilling 10 holes on one-half mile centers and identifying a substantial potash resource. This is the area now held by American Potash LLC. In 1956 Delhi identified an excellent potash target at Cane Creek, nine miles south of the Seven Mile area. They drilled 7 test holes there and decided that the Cane Creek target was thicker and higher grade. In 1957 a wildcat oil drill hole 10 miles (16.1 km) west of the Seven Mile area intersected a 16-foot (4.9m) thick high grade potash bed at the same stratigraphic horizon as Cane Creek and Seven Mile. This became known as the McRae area, now part of the American Potash property.

In 1961 Pan American Petroleum discovered the Salt Wash oil field, 16 miles northwest of the Seven Mile area. This drilling revealed a northwestern extension of the same "commercial thickness and grade" sylvite bed and other deeper ones. This underlies Mesa's Salt Wash Potash Area.

A review of oil and gas well data in the Whipsaw area showed that the same thick potash horizons are present there. Four miles west of Whipsaw, in section 4, T22S-R19E, thick potash (sylvite and carnalite) beds were intersected at depths between 2090 and 4200 feet (637-1280m) in wells from 1922, 1928 and 1942. These same intervals are present in holes within the Whipsaw property. Solution mining of potash was proposed here first (Evans, 1956).

In 1960 Texas Gulf Sulfur acquired the Delhi potash properties and was in full production from an underground mine by early in 1965. They announced that the Cane Creek potash bed was 11 feet (3.4m) thick and averaged 25 to 30% potash (Jackson, 1973). Similar grades and thickness are anticipated in the three Utah Potash permit areas.

The area with the most potash exploration activity is the White Cloud. J.E. Roberts recognized the possibility of producing potash and other salts from the area in 1958 and subsequently acquired control of much of what is now the White Cloud Potash area. In 1959 he drilled the White Cloud #1 hole in Sec 14, T26S, R20E to a depth of 4074 feet

(1242m), gaining an understanding of the “salt” or potash bearing zones. Other oil and gas drilling (including Delhi) passed through the same series of evaporite beds, at least 7 of which contain important deposits of potash and other “salts”, and one of which became the Cane Creek Mine.

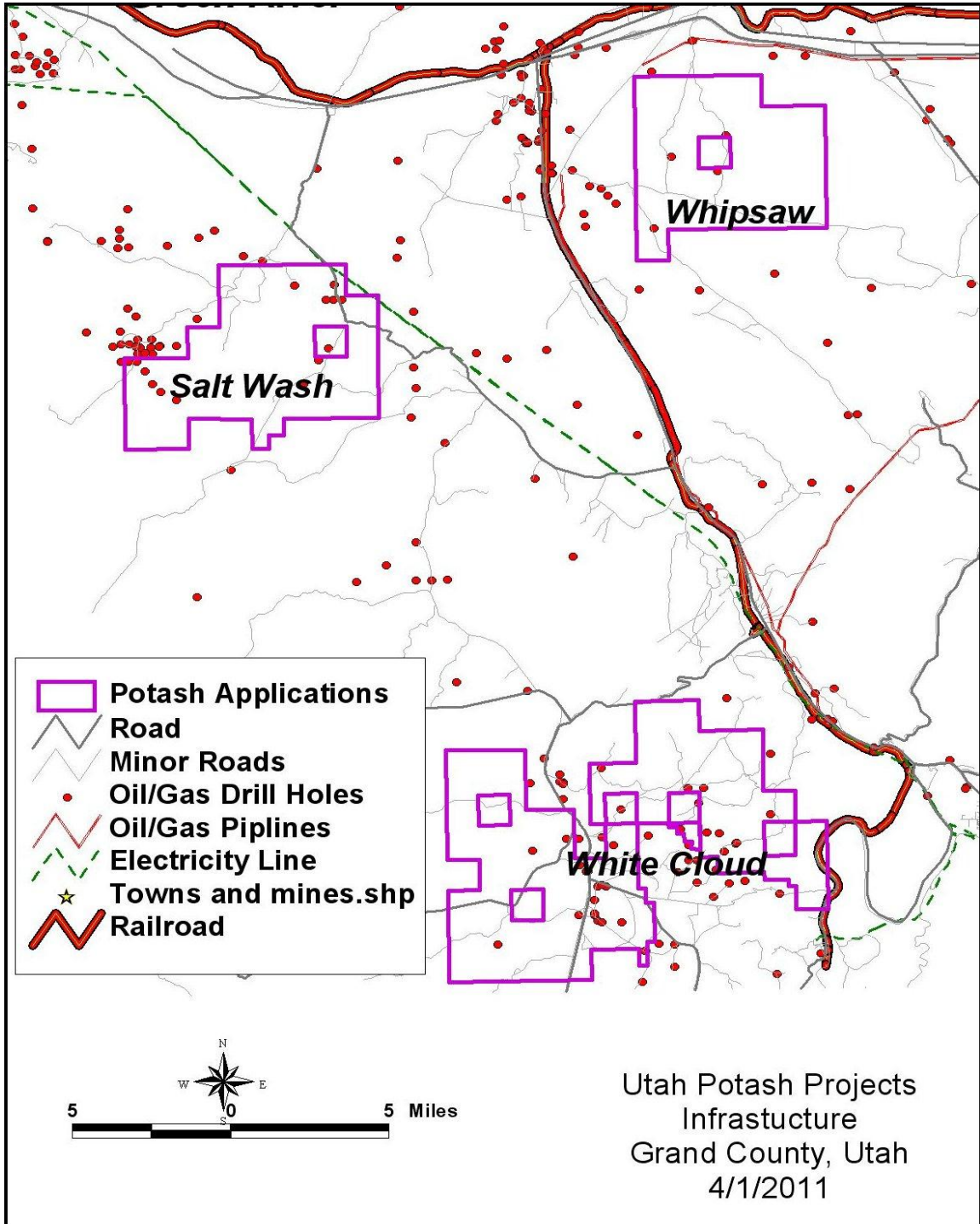


Figure 6.0 Utah Potash Infrastructure and Wells

The Cane Creek Mine switched to solution mining and solar evaporative precipitation in 1971, and is producing at a rate of 700 to 1000 tons (635-907 tonnes) of potash per day.

In 2008 Foster Wilson of Mesa Exploration recognized the potential for additional potash and brine resources from this area which could potentially be exploited by proven solution mining and solar evaporation methods, and filed applications for potash prospecting permits in the Salt wash, Whipsaw and White Cloud areas.

## 6.1 Historical Resource Estimates

There have been no formal resource estimates for any of the three Mesa Exploration potash application areas for either potash in situ or for the associated saturated brines that are often present. A private report by Evans (1956) suggested the possibility for a resource of 611,000 tons (555,000 tonnes) of K-Mg salts per acre immediately west of the Whipsaw area. A letter written in 1964 from Robert Norman, Manager of Buttes Oil & Gas Mineral Division (Gwynn, 2008) stated that he had calculated a total possible resource in the White Cloud area of 1.84 billion tons (1.67 billion tonnes) of sylvite in three beds, underlying about 48 square miles of the area, which ranged in grades from 25 to 30% K<sub>2</sub>O. His data was derived from a review of all available oil and gas well data in the area. A similar letter from H. Donald Curry (geologist) to Jeff Williams (BLM) on behalf of Mrs. Roberts dated May 13, 1981 (Gwynn, 2008), regarding the White Cloud area stated "...as much as 9,000,000 tons (8.2 million tonnes) of K<sub>2</sub>O equivalent in sylvite is estimated to be represented by only one of the multiple potash-bearing zones." The exact area included was not specified. Generally speaking then, there are at least 32 oil and gas test wells in the White Cloud area that define the presence of a very large tonnage of potash in several beds underlying the area controlled by Mesa Exploration.

Regarding the brines, a letter from J. E. Garrett (petroleum engineer) to J.E. Roberts, dated November 22, 1968 (Gwynn, 2008) stated "When the White Cloud #2 well is completed in Clastic 31 Zone it should exhibit the same initial pressure [as White Cloud #1]. I calculate that it should produce 50,000 B/D (barrels per day) through the proposed 8-5/8" casing."

Another letter from Garrett to Roberts, dated September 19, 1966 (Gwynn, 2008) stated that the brine "reserves may range all the way from a specific (finite) volume if the source is a closed aquifer to an unlimited amount if it is an actively replenishing aquifer. Assuming a closed aquifer, based on volumetric estimates limited to the six by eight mile area of established brine flows, in my opinion, the proved brine reserves are 15 million barrels. Here, proved reserves are used as in the petroleum industry to mean that they have an 85% chance, or more, of being recovered." This of course is quite different from current usage of the term "reserves" in the mining industry, thus these figures cannot be relied upon in that sense, and are not NI 43-101 compliant. Garrett went on to say "Statistically speaking, from the data developed in regard to the project, the 'expected' natural water reserves are estimated to be 300 million barrels. I further estimate that there is a possibility that the water reserves will be at least 500 million barrels. This figure could be obtained from either a large closed aquifer or from a live aquifer of

modest replenishment.”

The White Cloud #2 brine contained the following amounts of metals (and presumably others such as bromine, boron, strontium, etc, which were not included in the analysis, but are present in other wells nearby) according to analyses done by the USGS Ozark Mahoning Laboratory (Gwynn, 2008):

Sodium	28,500 ppm	equal to	2.85%	or	57 lb/ton
Potassium	47,000 ppm	equal to	4.70%	or	94 lb/ton
Lithium	1,700 ppm	equal to	0.17%	or	3.4 lb/ton
Calcium	46,700 ppm	equal to	4.67%	or	93.4 lb/ton
Magnesium	43,600 ppm	equal to	4.36%	or	87.2 lb/ton

A barrel of this brine weighs 450 pounds (204.5 kg) or 0.225 tons (0.204 tonnes). Thus the hypothetical 15 million barrels would weigh 3,375,000 tons (413,450 tonnes). By these figures, this “proved reserve” then represents 192 million pounds (87.3 million kg) of sodium, 317 million pounds (144.1 million kg) of potassium, 11.5 million pounds (5.2 million kg) of lithium, 315 million pounds (143 million kg) of calcium and 294 million pounds (133.6 million kg) of magnesium. Metallurgical recovery percentages are not considered. These are generally recovered as chlorides or oxides, thus the weights of the final product would be greater. As noted above, there may be recoverable amounts of other metals not included in the analysis.

Once again, these are pre-2001 historical resource estimates and they do not include recovery factors or costs, thus readers are cautioned that a Qualified Person has not done sufficient work to classify the historical estimates as current mineral resources, the issuer is not treating the historical estimate as current mineral resources and this historical estimate should not be relied upon. This is more of an indication of the area’s potential than an actual resource in mining industry terms.

There has been much less work done in the Salt Wash and Whipsaw areas regarding brines and potential production of potash. No wells have been drilled specifically to test for potash or saturated brines. The oil and gas drilling of targets in the Paradox formation and the underlying Leadville formation carbonates has merely defined the presence of the same stratigraphic horizons containing thick and potentially economically productive beds of potash, as well as other “salts”. Potash grades are anticipated in the range of 15 to 20% potassium oxide (K<sub>2</sub>O).

## **7.0 GEOLOGIC SETTING**

### **7.1 Regional Geology**

The Utah Potash Project is located in the north central part of the Colorado Plateau geologic province. On the west the province is separated from the Basin and Range province by a zone of normal faulting named the Watsatch Front. The Uintah Arch to the north is an anticlinal body cored by Precambrian rocks. The San Juan Mountains to the

east in southwestern Colorado are a sequence of Tertiary age intermediate volcanic rocks including a series of calderas and smaller bodies of intrusive rocks. There are several laccolithic intrusive bodies within the Colorado Plateau in southeastern Utah, shown in red in Figure 7.1.

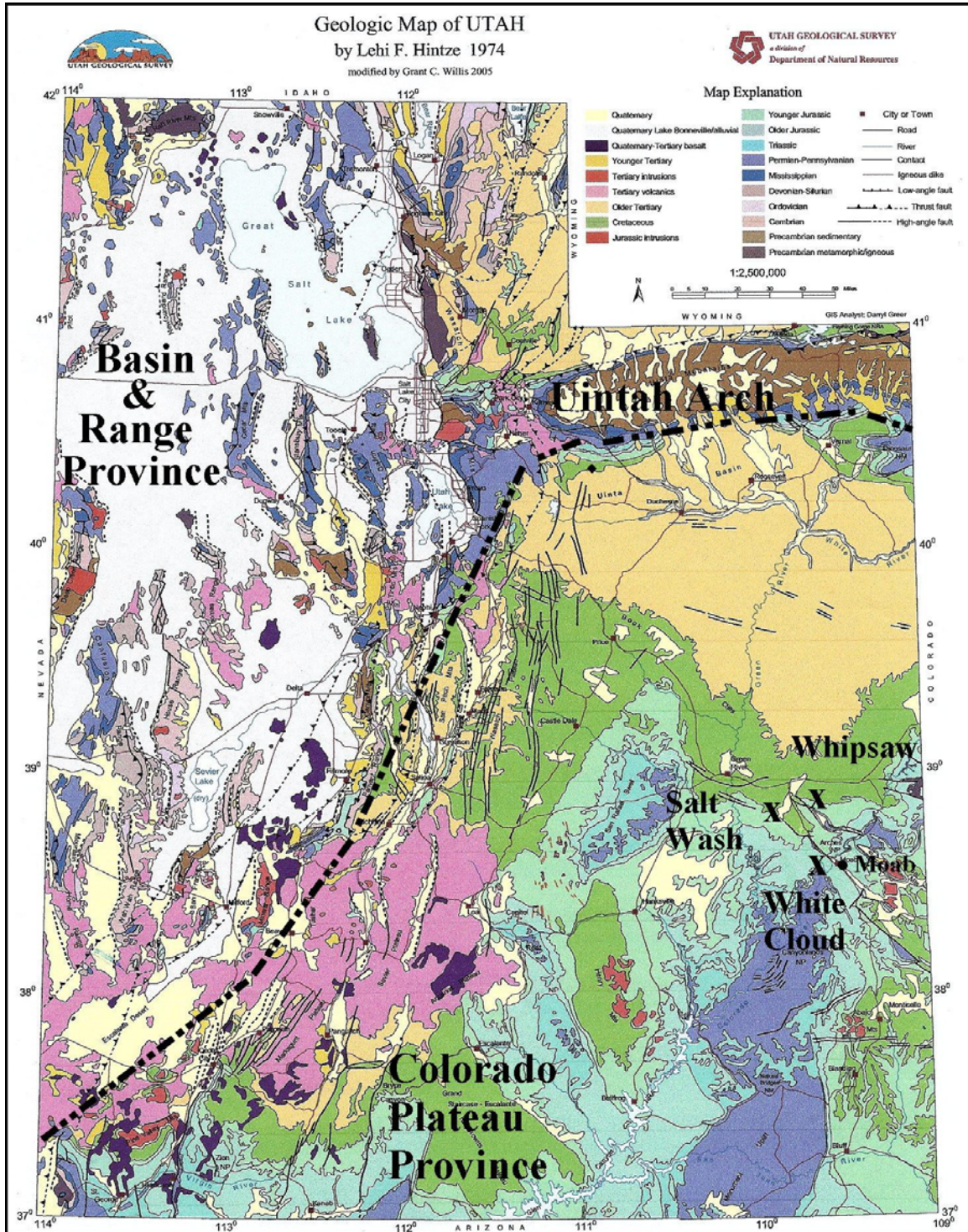


Figure 7.1 Regional Geology Map

The Colorado Plateau is a large area of relatively undisturbed, flat-lying to gently folded sedimentary units, largely of Upper Mesozoic age. Permian and older rocks are exposed in the more deeply eroded areas and lower Paleozoic to Precambrian rock units are exposed in the bottom of the Grand Canyon. In the area east of the Utah Potash Project, the predominant structural trends are defined by NW-SE striking normal faults of moderate displacement. To the south of the project, fault trends are predominantly E-W. In Figure 7.1 the rock units appear nearly flat-lying at that scale. In a district or project scale, broad gentle folds are evident.

## **7.2 District Geology**

The portion of the Colorado Plateau underlying much of southeastern Utah and extending into southwestern Colorado is referred to as the Paradox Basin. A sequence of sedimentary rocks ranging in age from Precambrian to upper Cretaceous is present in the Basin (Peterson, 1956). From Cambrian to Mississippian time the area of the Paradox Basin was a foreland shelf where thick layers of limestone were deposited. Regional subsidence in early Pennsylvanian time created a large sedimentary basin, with a restricted marine environment, resulting in multiple thick deposits of evaporite minerals including salt and potash. This Pennsylvanian stratigraphic unit is named the Paradox Member of the Hermosa Formation, which contains interbedded dolomite, shale, siltstone, salt and potash.

The axis of the Paradox Basin trends northwest-southeast. It is an asymmetrical basin with a steeply dipping and faulted eastern flank and a relatively gently dipping western flank. Local and regional gentle folding has occurred, combined with complex uplift and faulting related to the lateral and upward movement of salt and potash within the Paradox Basin. A series of long linear NW-trending anticlines formed in the project area, caused by flowage of the relatively plastic thick salt beds in the basin (see Fig 9.0a). Economic interest in this area has centered on oil and gas production from strata of Devonian, Mississippian and Pennsylvanian age. Several thick and potentially exploitable salt and potash deposits occur in the Hermosa Formation, but only one mine has been developed, the Cane Creek Mine, about 6 miles (9.7 km) southwest of Moab, Utah.

## **7.3 Utah Potash Project Area Geology**

In the area of the Utah Potash Project, large potash and salt deposits occur within a cyclic sequence of evaporites and fine grained clastic sediments in the Paradox formation. These are not exposed at the surface, but have been intersected in the subsurface by many of the more than 200 oil and gas test wells in the area (see Fig. 6.0). Stratigraphic units exposed at the surface range (Figure 7.3a) from the Lower Cretaceous Mancos Shale which caps mesas in the Salt Wash and Whipsaw areas, downward through the Cretaceous Dakota Sandstone, the Jurassic Morrison, Summerville, Curtis, Entrada, Carmel, Navajo, Kayenta and Wingate formations, the Triassic Chinle and Moenkopi formations, and the Permian Cutler Formation which outcrops only near the Colorado River southwest of Moab. The Pennsylvanian Honaker Trail and Paradox formations are not exposed in the area and are known only from drilling data.

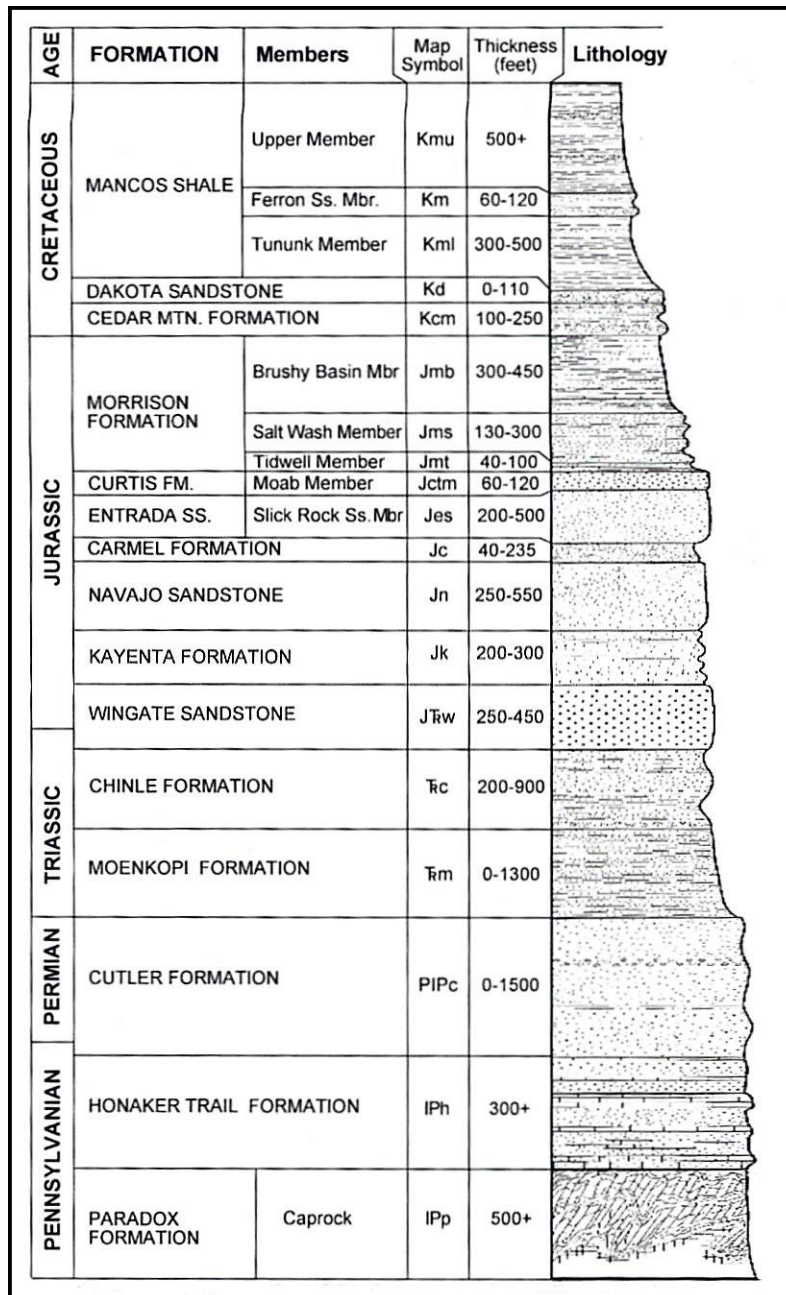


Figure 7.3a Generalized Stratigraphic Column, Utah Potash Project Areas

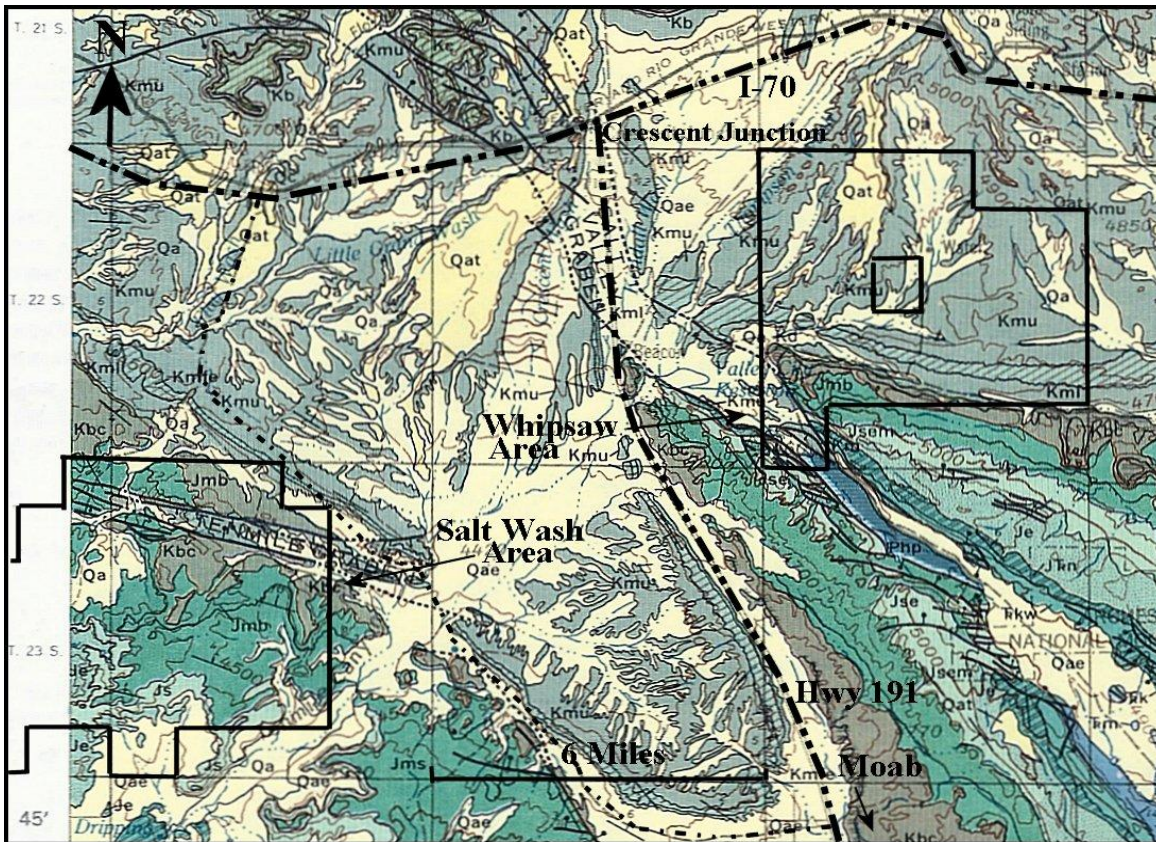
### 7.3.1 Salt Wash Area Geology

As shown in figure 7.3b, the surface geology of the Salt Wash area is relatively simple. The property is located on the gently dipping western flank of a broad northwest oriented syncline. Much of the area is occupied by Jurassic rocks of the Salt Wash Member of the Morrison Formation and the underlying Summerville and Entrada Formations. The Brushy Basin member of the Dakota Formation and the overlying shales of the Mancos Formation outcrop in the northeastern corner. The Tenmile Graben is a strong west-

northwest trending structural feature in the northern part of the property. The northeast trending Tenmile Canyon in the southeastern corner of the property follows a normal fault with a small displacement. Depth to the potash horizons in the Paradox formation would be approximately 5000 - 6000 feet (1524-1829m).

**Table 7.3 Map Legend – Salt Wash, Whipsaw and White Cloud Areas**

- Qat, Qae (yellow colors) -- Quaternary alluvial and aeolian deposits
- Kmu, Kml, Kmfe ( grey colors) -- Cretaceous Mancos shale
- Kbc (lt brown color) -- Burro Canyon Member of Cretaceous Dakota Sandstone
- Jmb, Jms (dark green color) -- Jurassic Morrison Formation
- Js, Jse, Jsem (light green color) -- Jurassic Summerville and Entrada Formations
- Jtrn (dark green with slash) -- Jurassic Navajo Formation
- TrKw (light green color) -- Triassic Kayenta and Wingate Formations
- Trc, Trm (light blue color) -- Triassic Chinle and Moenkopi Formations
- Pc (brown color) -- Permian Cutler Formation



**Figure 7.3b Geologic Map of Salt Wash and Whipsaw Potash Permit Areas**

### 7.3.2 Whipsaw Area Geology

In this area the stratigraphic units exposed at the surface are largely the Cretaceous Mancos shale and the Burro Canyon member of the Dakota Sandstone. The Jurassic Salt

Wash member of the Morrison formation, and the underlying Summerville and the Entrada formations are exposed in the southwest corner of the property. Most of this area is the gently northeast dipping flank of the Salt Valley Anticline. At the southwestern corner of the property, the Salt Valley Graben faulting follows the core of the anticline. Oil well logs from the faulted anticline area show contorted bedding and substantial thickening of the salt and potash horizons due to flowage there (Evans, 1956). Beds on the eastern limb of the anticline should be relatively undisturbed. Depths to the Paradox formation potash intervals would be approximately 5000 - 6000 feet (1524-1829m).

### 7.3.3 White Cloud Area Geology

Here the potash leases are largely on the top of a large Mesa capped by the flat lying Triassic Kayenta formation. The underlying Triassic Wingate, Chinle and Moenkopi (see Figure 7.3a) are exposed on the flanks of the mesa. The Permian Cutler formation is exposed in the southeast corner of the property near the Colorado River. Depths to the Paradox potash horizons are approximately 4500 to 5500 feet (1372-1677m) from the mesa top.

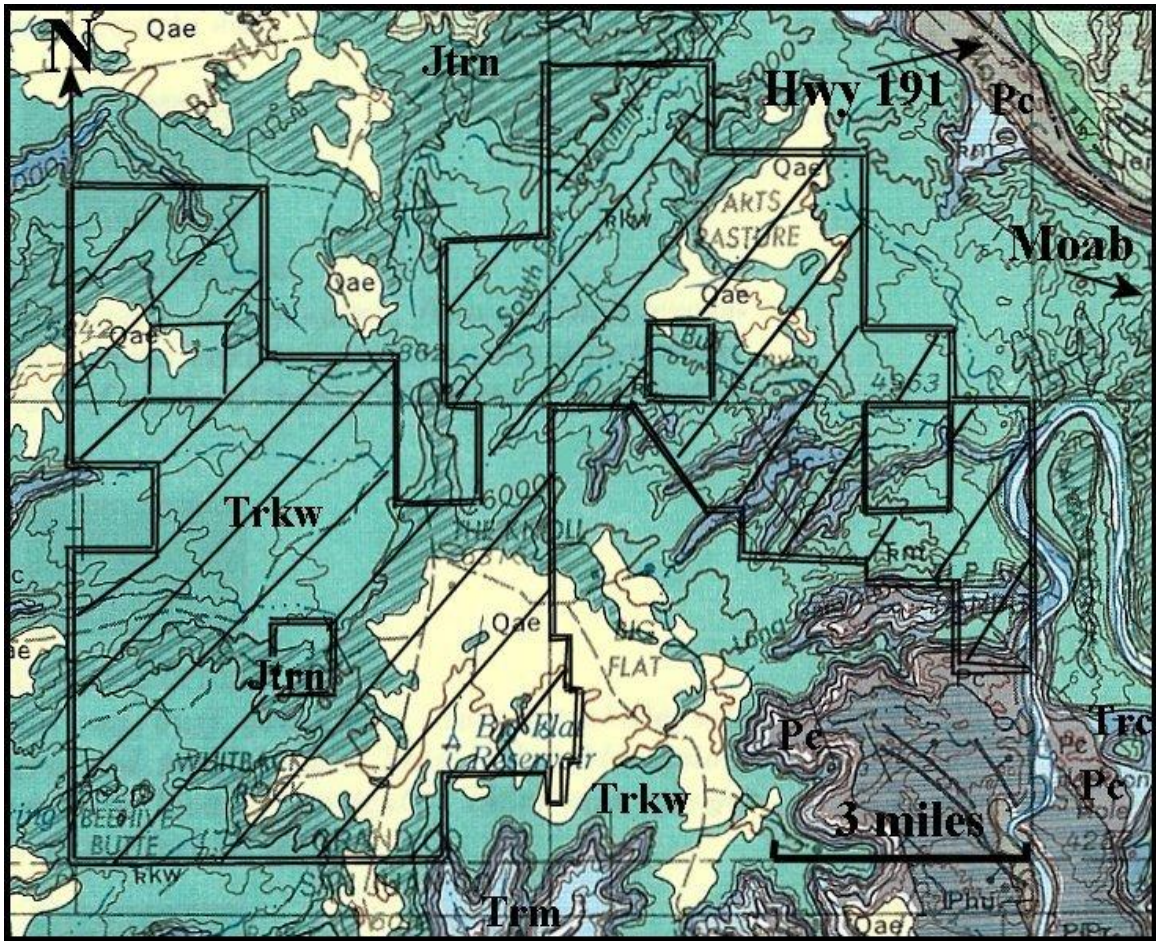


Figure 7.3c Geologic Map of White Cloud Area

## **8.0 DEPOSIT TYPES**

### **8.1 Brines**

Water is present in the subsurface almost everywhere. It occupies pore spaces, fractures and any other open spaces in the rock. Unless it is flowing rapidly through an open space such as a cavern, it is generally in chemical equilibrium with the surrounding rocks. Obviously the water in equilibrium with clean sandstone will be quite different from that in a salt bed. Water generally moves laterally through more porous units such as sandstone rather than across less permeable units such as shale. The more permeable units through which water preferentially flows, bounded by less permeable units above and below, are referred to as aquifers. In most areas aquifers, such as the Oglallah aquifer in the Great Plains, are prolific sources of fresh water. If the water is under pressure, it may have natural artesian flow – otherwise it must be pumped.

Other aquifers, such as that intersected in the White Cloud #2 well, which penetrated the Paradox salt beds, contain extremely saline water because they flow through and are in equilibrium with evaporite deposits of salt, potash or other minerals. These can contain high concentrations of “salts” and are generically referred to as brines. Brines derived from evaporate deposits are the principal source of the world’s lithium production from such places as the salars in the Atacama Desert of Chile, Searles Lake and the Salton Sea in California and near Silver Peak in Nevada. Large amounts of salt, magnesium chloride, potash and other minerals are also produced worldwide from similar brines.

### **8.2 Evaporite Deposits**

Most of the world’s salt and potash are mined underground from laterally extensive evaporite layers in the sedimentary sequence. Evaporite layers are commonly tabular in shape, but often are deformed by the pressure of overlying rocks into more equant shapes. In many places, such as the along the north side of the Gulf of Mexico, the lighter bodies of salt have been squeezed upward along faults to form diapiric salt domes, that may be hundreds of feet in diameter and thousands of feet in depth. Movable thicknesses range up to several tens of feet in the more tabular deposits and to hundreds of feet in salt domes or other salt flow structures.

The more tabular deposits are commonly mined underground by room and pillar or longwall methods, similar to coal mines. In the past several decades, salt and potash producers have turned to solution mining as a less expensive and less hazardous means of mining. The world’s first solution potash mine was put into production by Kalium Chemicals Ltd. near Regina, Saskatchewan, in 1964. The depth to the potash horizon was 5200 feet (1585m), roughly the same depth below surface as the evaporite targets on the Mesa Exploraton properties. If an economic potash resource was to be developed in the Utah Potash Project areas, it would likely be solution mined. This consists of recovering existing water in equilibrium with the evaporites, injecting water to dissolve the salts, or a combination of the two. Individual deposits may be mined for decades. The Cane Creek Potash Mine immediately southeast of the White Cloud Potash Project is a local example.

It has been in constant operation since it opened in 1965. Initially a typical room and pillar underground mine, it was converted to a solution mining operation in 1971. It is mining potash from the Cycle 5 evaporite horizon (see Figure 9.0b).

## 9.0 MINERALIZATION

Both the potash deposits and the associated brines at the three parts of the Utah Potash Project are exploration targets. Both are stratigraphically controlled. The potash bearing stratigraphic intervals of the Paradox Member of the Hermosa Formation are confined to

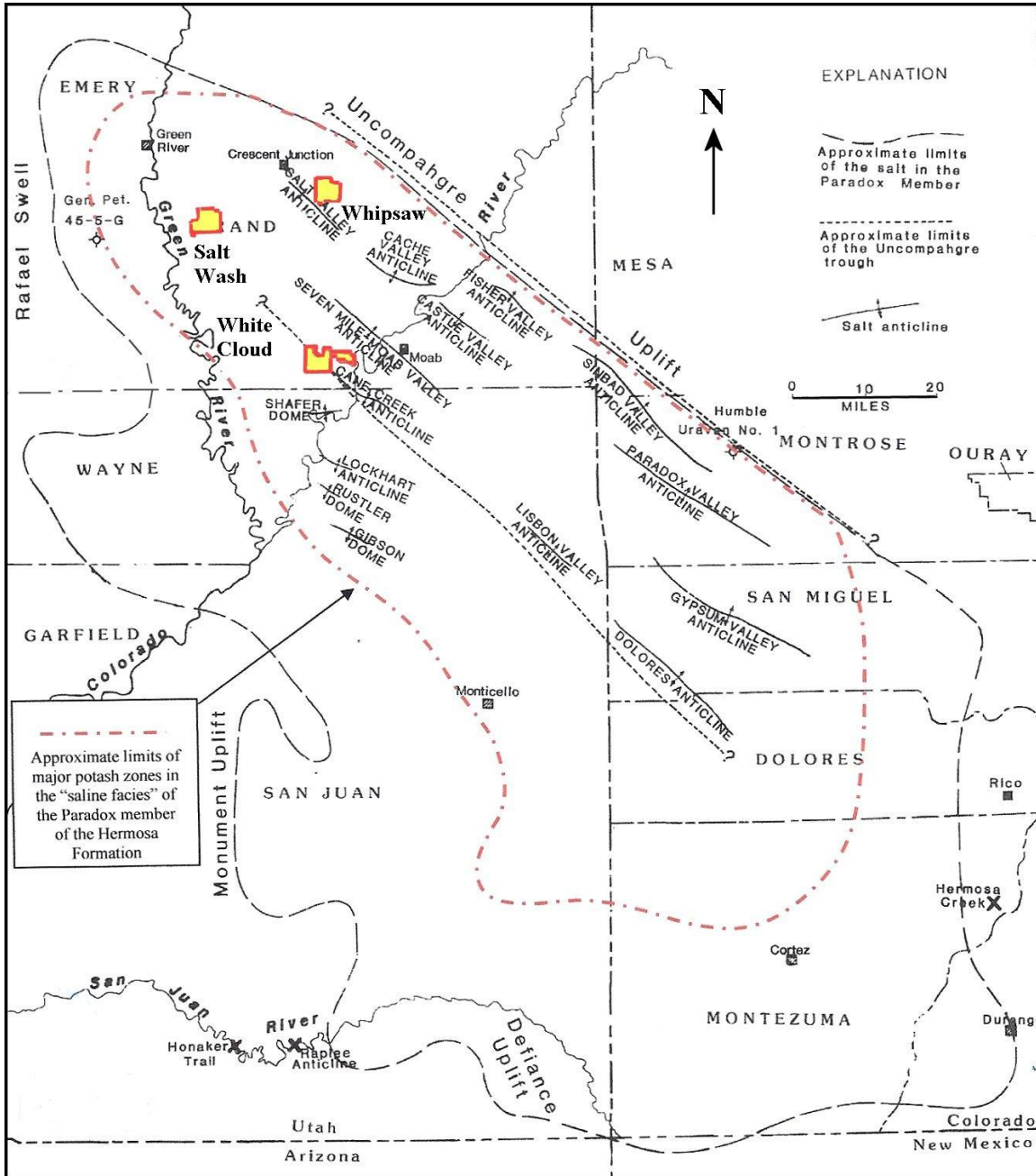


Figure 9.0a Paradox Basin Potash Distribution Map (Wiegand, 1981)

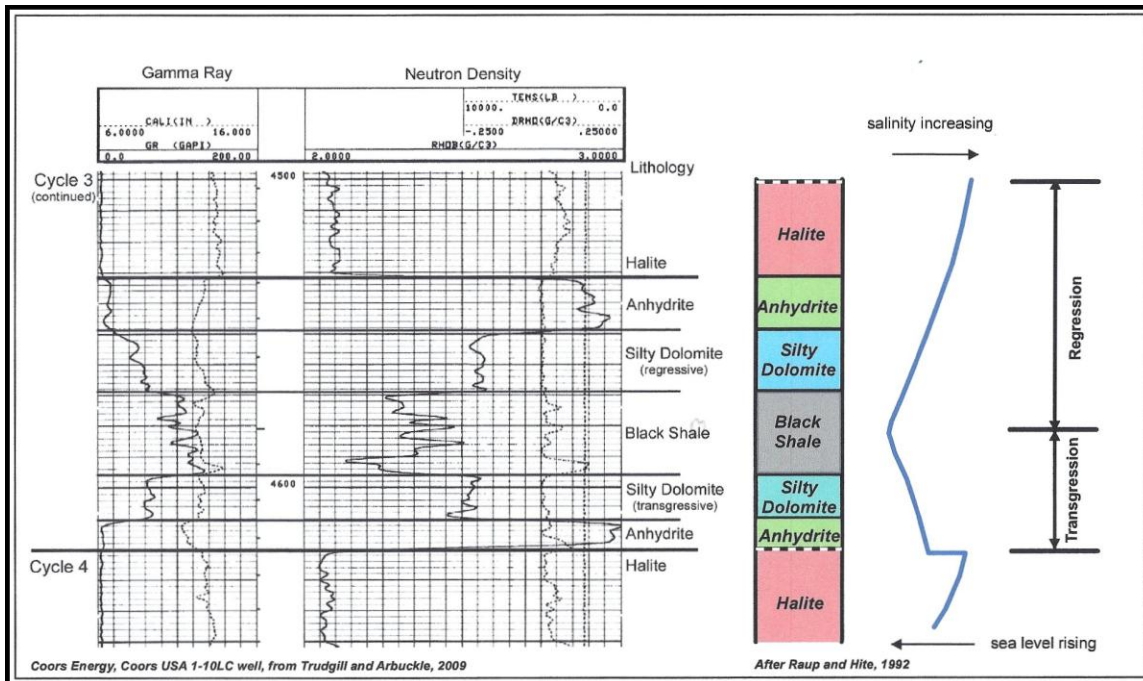


Figure 9.0b Paradox Evaporite Cycle and Log Signatures (Allen, 2009)

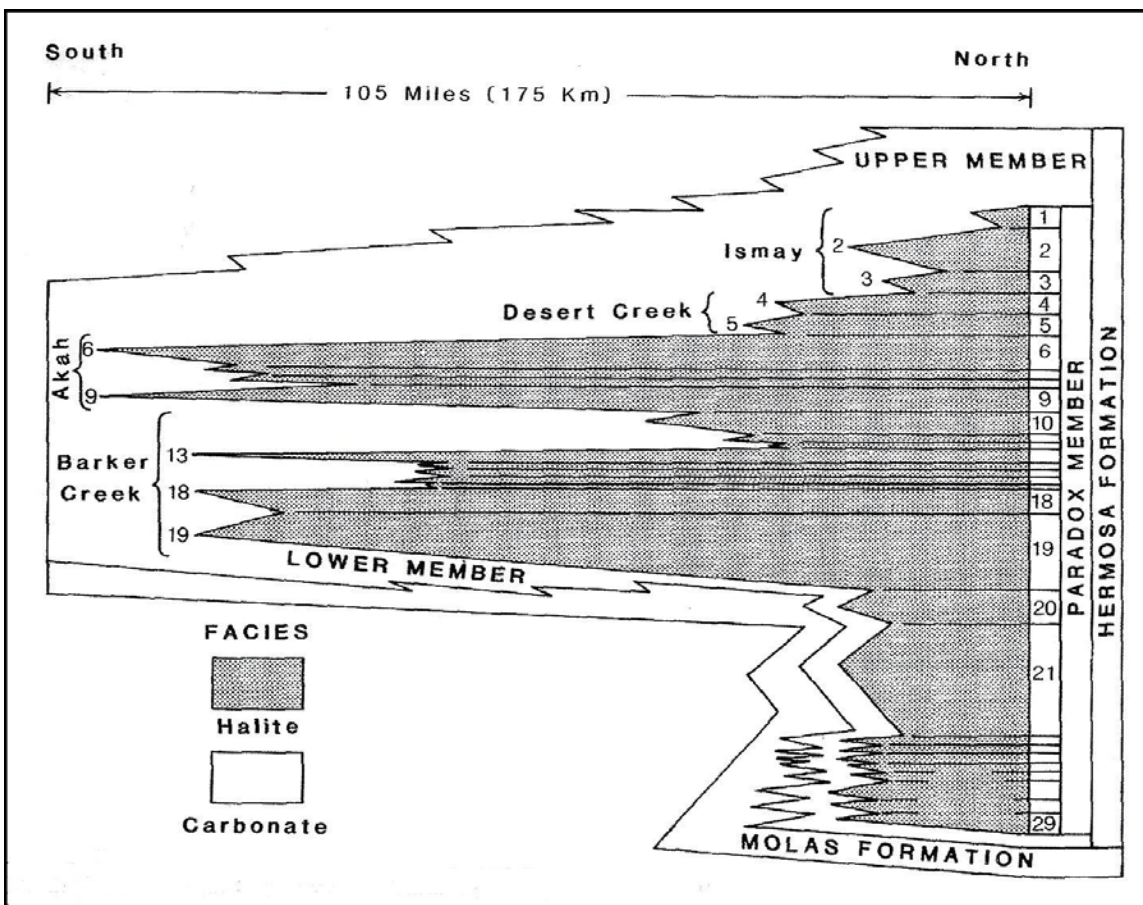
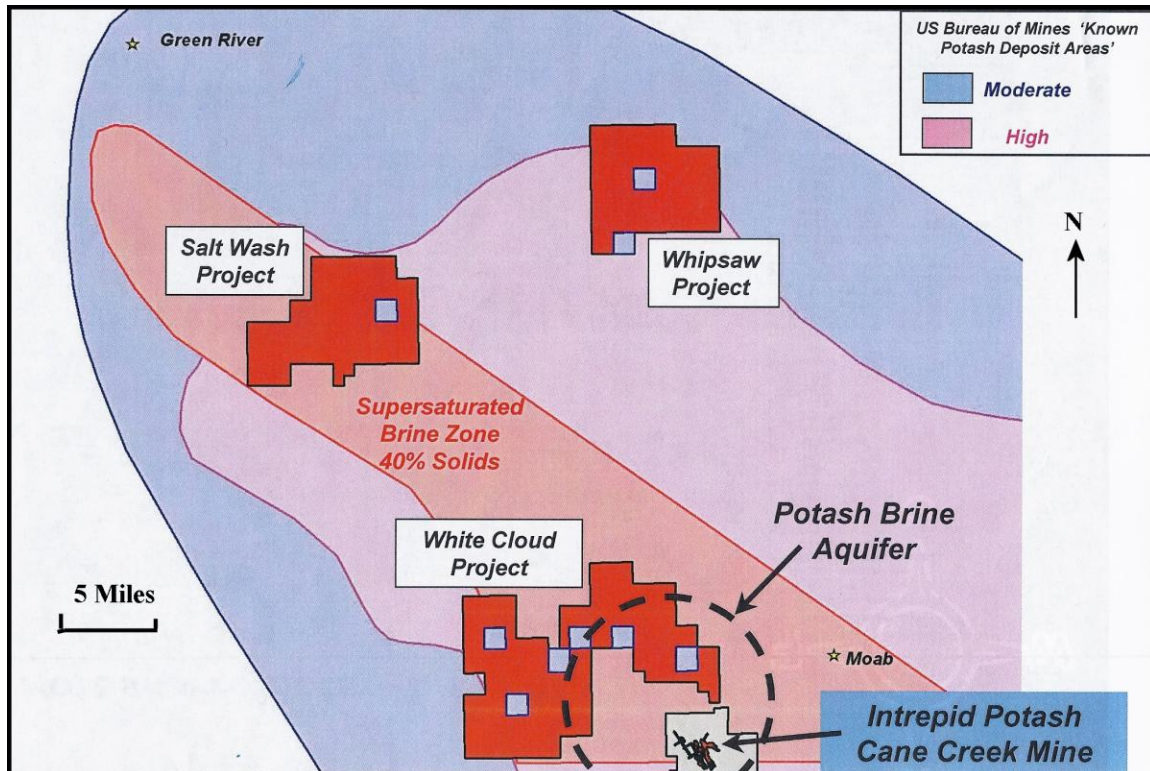


Figure 9.0c Paradox Basin Evaporite Cycles Schematic Section (Wiegand, 1981)

an oval region which extends 120 miles (108.8 km) in a NW-SE direction and 45 miles (72.4 km) in a NE-SW direction, as shown in Figure 9.0a. In the Utah Potash Project areas there are at least seven significant potash beds within 6500 feet (1982m) of the surface, and 29 evaporite cycles in total. Each evaporite cycle consists from bottom to top of anhydrite, silty dolomite, shale, silty dolomite, anhydrite, and halite +/-sylvite (potash). Figure 9.0b demonstrates this cycle and how it is reflected in typical gamma ray-neutron density logs. The maximum lateral extent of evaporite conditions came in 5 of these – cycles 6, 9, 13, 18 and 19 (Wiegand, 1981) - as shown in Fig 9.0c. Data were derived from Hite, 1960, 1961.



**Figure 9.0d Southeast Utah Potash Potential Map**

The above map (Figure 9.0d) was produced from US Bureau of Mines data (Mayhew, 1966). Mineral potential estimates are also available in Tabett, 2005. It shows the interpreted probable distribution of thicker and better grade, potentially minable potash deposits in the northwestern portion of the Paradox Basin. The Supersaturated Brine Zone contour represents the + 40% dissolved solids contour from Figure 6 in Mayhew’s 1965 paper “Concentrated Subsurface Brines in the Moab Region, Utah.” Mesa Exploration’s Salt Wash and White Cloud target areas are located to take advantage of the areas of both the higher potential for stratiform potash deposits and also the area of known supersaturated brine concentrations. The Whipsaw area also has high potential for stratiform potash deposits, and perhaps for supersaturated brines.

Intrepid Minerals is mining the Cycle 5 potash beds at the Cane Creek Mine adjacent to Mesa’s White Cloud area, which is also Mesa’s principal target horizon at White Cloud.

American Potash LLC (Allen, 2009) is targeting Cycle 13 in the area between Mesa's Salt Wash and White Cloud target areas. Cycles 5 and 13 will be the principal targets at the Salt Wash and Whipsaw areas as well, and further investigation of oil and gas well data may suggest other targets. Mesa is also investigating brines with very high concentrations of potash and other salts flowing from a clastic interval between two salt units called Clastic Zone 31, which is described in detail in Mayhew, 1965, and is represented by the Supersaturated Brine Zone in Figure 9.0d. Clastic Zone 31 is between Hite's (Hite, 1961) evaporate cycles 15 and 16 (Mayhew, 1965). This was a source of major brine flows in several oil wells in the White Cloud area including the wells White Cloud #2 and Long Canyon #1. Several other clastic zones in the section underlying Mesa's Utah Potash Project areas had substantial flows of saturated brines.

### 9.1 Potential Potash Production from Brines

One of the potential potash production options in the Utah Potash Project is the supersaturated brines. Brine from several of the wells in the White Cloud Project area was analyzed for minerals of economic value. The highest values were in the eastern portion of the Big Flat area, near the crest of the Cave Creek Anticline. Table 9.1a indicates the artesian brine flow rates from these wells.

**Table 9.1a Big Flat Artesian Wells**

Well Name	Pressure	Flow Rate	Strat Interval
Murphy No. 1	3370 psi	11,700 gal/hr	Clastic zone 39
Pure Oil #2	4570 psi	2,100 gal/hr	Clastic zone 31
Long Canyon #1	n/a	2,000 gal/hr	Clastic zone 31
White Cloud #2	4953 psi	87,000 gal/hr	Clastic zone 31

**Table 9.1b Oil & Gas Well Mineral Content in Brine**

Well Name	Boron	Br (ppm)	KCl	Li (ppm)	MgCl <sub>2</sub>
Tidewater 74-11	n/a	n/a	4.3%	n/a	15.3%
Southern Natural #1	n/a	6,100	4.5%	500	17.8%
King Oil No.2	810	1,150	7.9%	173	18.7%
Pure Oil No.1	1,260	1,612	4.9%	n/a	12.3%
Big Flat No.2	780	2,041	4.0%	81	13.0%

Clearly these data indicate that the interstitial brines in the permeable clastic units between and above evaporite units carry substantial quantities of potash, magnesium chloride, boron, lithium and bromine. In addition to potash it may be possible to recover bromine, boron, lithium and magnesium chloride from these brines in commercial quantities. The data above is from holes in the White Cloud area, but the zone of super-saturated brines extends 40 miles to the northwest to include the Salt Wash target area.

The following is a quote from the concluding paragraph of Mayhew’s 1965 paper on concentrated brines in the Moab area:

“Supersaturated brines, containing substantial quantities of many elements, are present in the subsurface of southeastern Utah, particularly in the Moab region. The town of Moab is in the central part of the Paradox Basin where the salts are well developed and the brines are supersaturated. Clastic breaks between various salt beds provide potential reservoirs for brine accumulation. Clastic break 31, a 5 to 30 foot zone separating Hite’s salt beds 15 and 16, is brine productive throughout the Big Flat-Long Canyon area, with some flows gauged in excess of 150 barrels (6,300 gallons) per hour. In addition to the clastic breaks in the Paradox Formation, porous dolomites and limestones of Mississippian age are within reach of the drill under much of southeastern Utah.

With proper development of production techniques, concentrated brines could be commercially extracted in southeastern Utah.”

## 9.2 Potash Production Potential

### 9.2.1 White Cloud Area Potash

As Figure 9.0 indicates, the Paradox Basin is a major depository of potash and other evaporate minerals, deposited in an area 120 by 45 miles (193 x 72.4 km). Of the fifty-five oil and gas wells in Mesa Exploration’s White Cloud area alone, at least thirty-two holes intercepted several thick potash and salt horizons (Table 9.2a-2). This drilling has demonstrated that there are at least seven potash beds of commercial grade and thickness underlying the White Cloud property, within 6500 feet (1982m) of the surface. These were described in a packet of papers from the Roberts family, who were promoting the potash deposits in the 1950’s and 1960’s, provided by Wally Gwynn (Gwynn, 2008) of the Utah Geological Survey.

**Table 9.2.1a Potash Intervals Underlying White Cloud Area**

Bed	Depth Range	% K2O	Avg. Thickness	Notes
#1	3600-4500 ft	23	15 ft (4.6m)	Mined at Cane Creek
#2	3800-4700 ft	25	10 ft (3.3m)	Absent at Cane Creek
#3	4400-5300 ft	30	10 to 15 ft 3.3-46m)	
#4	4800-5700 ft	20	20 ft (6.6m)	w/ carnalite
#5	5300-6300 ft	20	10 ft (3.3m)	Clastic 31 zone brine at 6000 ft (1829m)
#6	5400-6300 ft	25	20 ft (6.6m)	
#7	5600-6500 ft	12	20 ft (6.6m)	w/ carnalite

Much of this material may be too deep for underground mining. However, solution

mining should be a viable option. The world's first solution potash mine near Regina, Saskatchewan, was put into production in 1964. The depth to the potash horizon was 5200ft (1585m), roughly the same depth below surface as most of the evaporite targets on the Mesa Exploraton properties. The nearby Cane Creek underground mine was initially at 3000 feet (915m) below the surface, and is currently a solution mine at that and greater depths.

From the pattern of wells shown in Figure 6.0, it is clear that the distribution of potash beds is well known from log data. Of course, for mine planning purposes additional more closely-spaced drilling will be required. .

**Table 9.2.1b White Cloud Well Data**

NAME	Log Type	STATUS	ELEVATION	QTR_QTR	SECTION	TOWNSHIP	RANGE
BIG FLAT UNIT 6	Neutron	PA	5775 DF	NWSE	27	250S	190E
BIG FLAT UNIT 5	GR Neutron	PA	5767 KB	NWSE	27	250S	190E
FED BARTLETT FLAT 10-27	Sonic	PA	5752 GR	NWSE	27	250S	190E
KANE SPRINGS FED 27-1	Sonic	POW	5763 GR	NWSE	27	250S	190E
KANE SPRINGS FED 28-1	Sonic	PA	5602 KB	NWSE	28	250S	190E
KANE SPRINGS FED 25-19-34-1	Sonic	POW	5821 GR	NWNE	34	250S	190E
CANE CREEK FED 7-1	Sonic	PA	5162 GR	SENE	7	250S	190E
GOLD BAR UNIT 1	Sonic	PA	5310 GR	SWSE	29	250S	200E
GOLD BAR UNIT 2	Sonic	PA	4852 GR	SESW	23	250S	200E
MOAB FED 16-9	Sonic	PA	4996 GR	SESE	9	250S	200E
BIG FLAT-GOVT 1	GR Neutron	PA	5960 GR	NWNW	31	260S	200E
BIG FLAT UNIT 7	Sonic	PA	5846 DF	SENE	6	260S	200E
LITTLE VALLEY-FED 1	Sonic	PA	5924 GR	NWSW	29	260S	200E
WHITE CLOUD 1	GR Neutron	PA	4347 DF	SENE	14	260S	200E
LONG CANYON UNIT 2	GR Neutron	PA	5846 GR	SESE	9	260S	200E
HOBSON USA 1	GR Neutron	PA	5957 GR	NWNW	30	260S	200E
LONG CANYON 1	Sonic	POW	5803 GR	SENE	9	260S	200E
MATTHEW FED 1	Sonic	PA	4937 KB	SESE	4	260S	200E
SKYLINE UNIT 1	Sonic	PA	5694 KB	NWSE	5	260S	200E
MATTHEW FED 2	GR Neutron	PA	5015 KB	SWNE	4	260S	200E
COORS USA 1-10LC	Sonic	PA	5634 GR	SESW	10	260S	200E
KANE SPRINGS FED 19-1A	Sonic	POW	5990 KB	SWNE	19	260S	200E
BIG FLAT UNIT 2	GR Neutron	PA	6114 KB	SWNE	14	260S	190E
BIG FLAT UNIT 4	Sonic	PA	6007 GR	NWNE	23	260S	190E
TIDEWATER OIL CO 74-11	GR Neutron	PA	6141 GR	SENE	11	260S	190E
BIG FLAT UNIT 1	GR Neutron	PA	6021 GR	SWSE	14	260S	190E
BIG FLAT UNIT 3	GR Neutron	PA	5997 GR	NENE	23	260S	190E
KING OIL COMPANY 1 RUBY	GR Neutron	PA	6139 GR	SESE	11	260S	190E
SUNBURST 1	Sonic	PA	6109 GR	SWSW	14	260S	190E
MINERAL CANYON FED 1-3	Sonic	PA	5858 GR	SENE	3	260S	190E
KANE SPRINGS FED 20-1	Sonic	PA	5633 GR	SESW	20	260S	190E
CANE CREEK FED 11-1	Sonic	PA	6146 GR	SENE	11	260S	190E

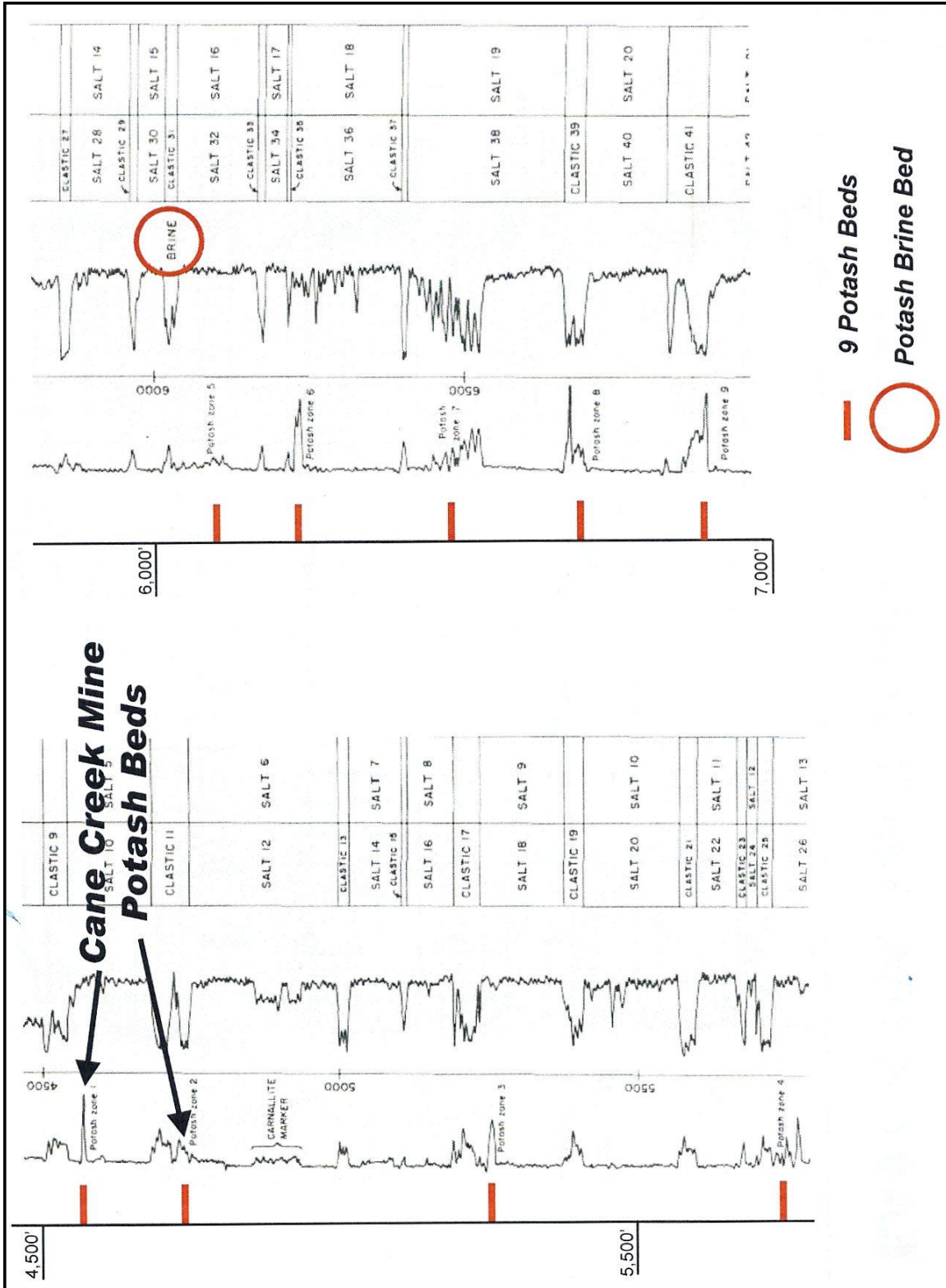


Figure 9.2.1 Log of Southern Natural #1 Well – Potash and Brine Intervals

### 9.2.2 Salt Wash Area Potash

American Potash, LLC (Allen, 2009) published gamma ray-resistivity logs from the Federal 1-26 well showing the intervals containing potash beds in Cycle 5 and Cycle 13, which are their primary targets, and would be the logical targets at Salt Wash. This well is located approximately 8 miles south of the center of the Salt Wash property and Cycle 13 is interpreted to continue beneath the property. Depths to the potash horizons should be similar. Cycle 5 in Figure 9.2b-1 below at the 5372 foot (1638m) depth is the same horizon as that being solution mined at the Cane Creek Mine

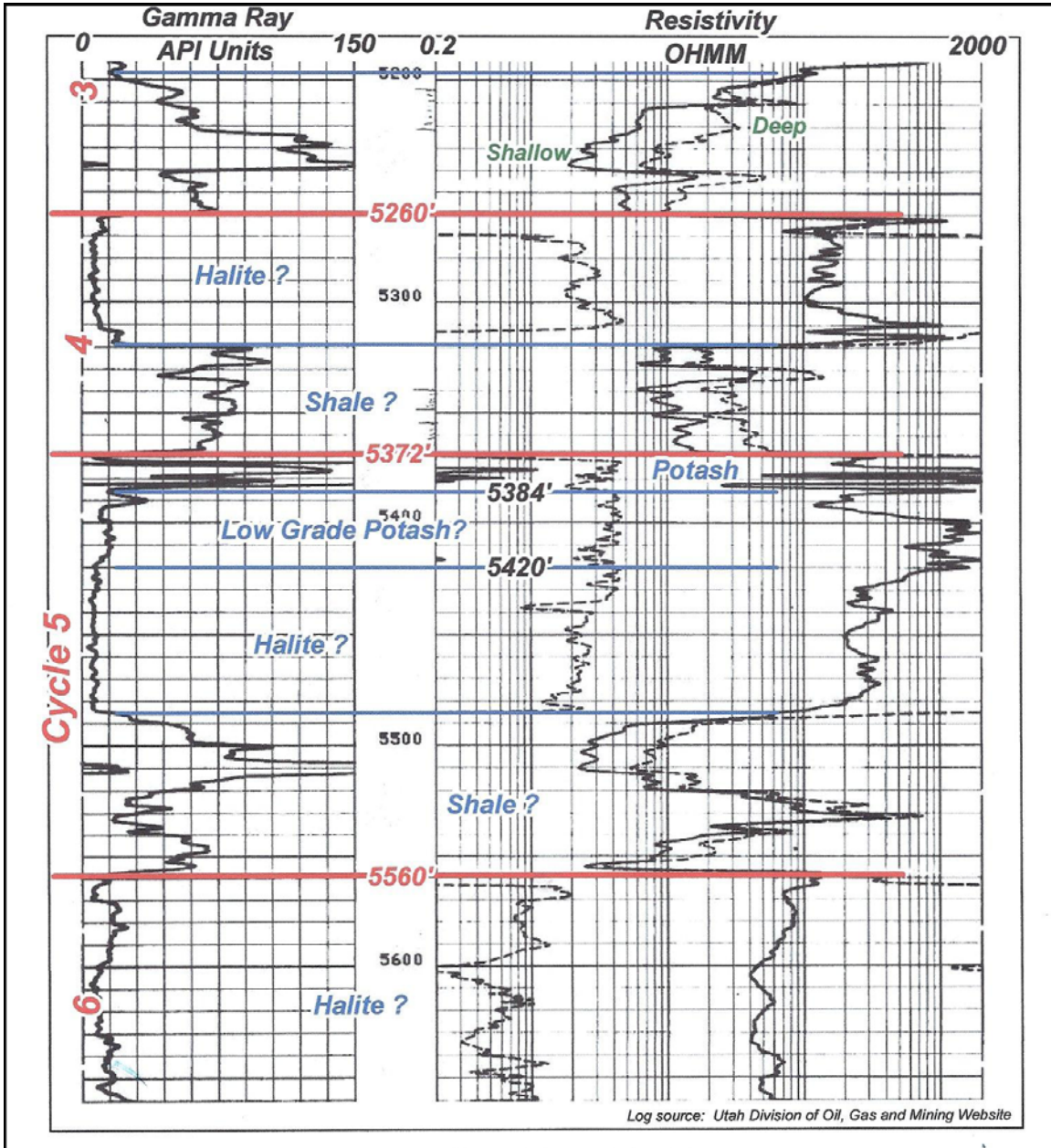


Figure 9.2.2a Salt Wash Area South – Log Federal 1-26 Cycle 5

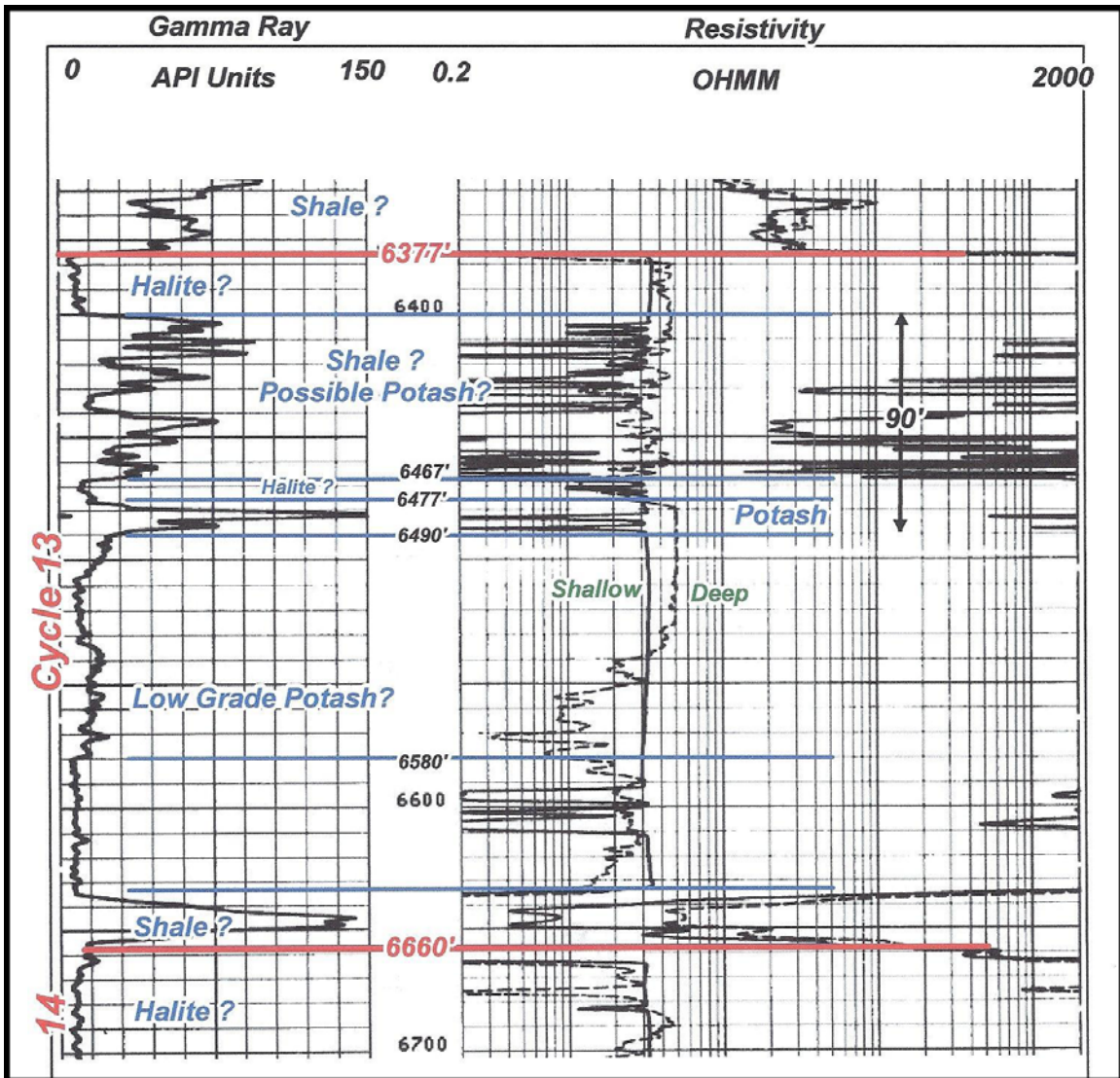


Figure 9.2.2b Salt Wash Area South – Log Federal 1-26 Cycle 13

In 1961 Pan American Petroleum discovered the Salt Wash oil field, 16 miles (25.7km) northwest of the Seven Mile area. This drilling revealed a northwestern extension of the same “commercial thickness and grade” sylvite bed (Cycle 13?) and other deeper ones. This underlies Mesa’s Salt Wash Potash Area. In the Salt Wash target area there are more than 40 oil and gas wells on or within a few miles of the property. Table 9.2b provides details of eighteen of these holes which penetrated the Paradox formation in the target area, whose logs are available from the Utah Geologic Survey. At this point Mesa Exploration has not examined these logs in detail. It should be relatively simple to define the potash bearing intervals in these holes, as American Potash has done, and to produce cross sections and potash bed thickness maps. These can then be used to define drilling targets.

**Table 9.2.2 Salt Wash Well Data**

NAME	Log Type	STATUS	ELEVATION	QTR_QTR	SECTION	TOWNSHIP	RANGE
GREENTOWN ST 32-42	Sonic	SGW	4344 GR	SENE	32	220S	170E
FLOY UNIT 1	Sonic	PA	4298 GR	SESW	11	230S	170E
SALT WASH UNIT 1	Sonic	PA	4283 DF	NWSW	15	230S	170E
SUNILAND STATE A 1	Sonic	PA	4435 DF	NESE	16	230S	170E
SUNILAND STATE A-2	Resistivity	SGW	4388 DF	SESW	16	230S	170E
CF&I 22-16	Sonic	TA	4470 GR	SENW	16	230S	170E
CF&I 42-16	Sonic	TA	4524 GR	SENE	16	230S	170E
GOVT SMOOT 1	Resistivity	PA	4342 DF	SENE	17	230S	170E
GOVT SMOOT 2	Sonic	SOW	4299 KB	NWSE	17	230S	170E
MT FUEL FEDERAL 1-21	Sonic	PA	4522 KB	NWNW	21	230S	180E
SALT WASH NORTH 1	Neutron	PA	4443 GR	NESW	9	230S	170E
FEDERAL SKYLINE 1A SW	Resistivity	PA	4125 GR	SESE	21	230S	170E
FEDERAL DE-1	Sonic	PA	4544 GR	SWSE	20	230S	180E
GORMAN FED 1	Sonic	WDW	4302 KB	NENW	21	230S	170E
GOVT 18-2	Sonic	SOW	4202 GR	NENE	18	230S	170E
FEDERAL 1-15	Resistivity	SOW	4295 KB	NWSW	15	230S	170E
STATE 1-16A	Resistivity	POW	4418 KB	SWSE	16	230S	170E
SHELL QUINTANA FED 1-1	Sonic	PA	4479 KB	NESW	1	240S	170E

### 9.2.3 Whipsaw Area Potash

Mesa Exploration has done little work at the Whipsaw property at this time. Figure 6.0 shows that there are four oil and gas wells within the property boundary and several others within a few miles of the boundary. A preliminary review of oil and gas well data in the Whipsaw area showed that similar thick potash horizons are present there. Near the faulted axis of the Salt Valley anticline four miles (6.4km) west of Whipsaw, in section 4, T22S-R19E, thick potash (sylvite and carnalite) beds were intersected at depths between 3300 and 4200 feet (1006-1280m). Solution mining was being investigated at that time (Evans, 1956). These appear to be the Cycle 5 and Cycle 13 horizons. Data from two other holes in the area is displayed in Figure 9.2c below. It is anticipated that both Cycle 5 and 13 persist below the Whipsaw area, and are gently dipping tabular deposits. Detailed review of well logs in the area will allow determination of depths to the potash horizons and their thicknesses. This data can then be used to assess the potash potential of the property in greater detail, and aid in planning an exploration program.

**Table 9.2.3 Whipsaw Well Data**

Name	Well log type	Status	elevation	qt sec	section	T	R
STATE MSC 35-1	Sonic	SGW	4876 GR	NWNW	35	210S	190E
FEDERAL MSC 26-1	Sonic	SGW	4916 GR	NESW	26	210S	190E

## 10.0 EXPLORATION

This section will briefly summarize the significant historic exploration on the property.

### 10.1 Surface Mapping

Mesa Exploration Corporation has done no geologic mapping at any of the three Utah Potash Project locations. Existing geologic mapping is adequate for the present time. There is an excellent 1:100,000 scale detailed geologic map by H.H. Doelling which was

published by the Utah Geological Survey (Doelling, 2001), and another in Geology of Dead Horse State Park (Doelling, et al, 2010, page 413). The US Geologic Survey has also published an excellent map of the area at 1:250,000 scale (Williams, 1964).

## **10.2 Sampling**

Mesa Uranium Corporation has done no sampling at the Utah Potash Project. There are no surface exposures of mineralization or accessible underground workings which could be sampled. The only available data is in the form of logs and other reports from oil and gas well drilling and limited potash development, largely in the White Cloud area

## **10.3 Data Review**

Fortunately, of the more than 200 oil and gas wells drilled in the vicinity of the three Utah Potash properties, many penetrated the Paradox Salt member of the Hermosa formation, which contains the super-saturated brines and evaporite beds. Geologic and geophysical (sonic or GR Neutron) logs are available for study. It is this data that was used to study the distribution and grades of the potash/salt horizons and brines in the Utah Potash Project. Various prior workers in the area created maps showing structure contours, isopachs, and structural interpretations in the process of doing oil and gas exploration in the past. Much of this material is also available for study.

## **11.0 DRILLING**

### **11.1 Drilling Summary**

This section reviews historic drilling on the property. Mesa Exploration Corporation has done no drilling on the Utah Potash Project. Tables 9.2.1a (White Cloud area), 9.2.1b (Salt Wash area), and 9.2.1c (Whipsaw area) display the details of the oil and gas wells in these three exploration areas that penetrated the Paradox Salt units. It is from the basic data contained in the logs of these wells that the distribution of the potash deposits and the target concepts were derived. These logs were acquired from the Division of Natural Resources, Utah Geological Survey.

### **11.2 Oil and Gas Well Drilling**

There is very little information which has been preserved regarding the drilling procedures for the oil and gas wells. The earliest drilling date mentioned in the available data is 1922, when the first potash beds were described. There may have been some drilling before that date. The author must assume that little has changed in the basic process of oil well drilling, even over a span of 80 years. Nearly all of the drilling was conventional rotary drilling using heavy mud, except for early cable tool drilling. Some of the holes drilled in the 1950's had blowouts when they encountered the super-saturated brines under artesian pressure. From that experience later wells were drilled using heavier mud.

### **11.3 Core Drilling**

The drilling was nearly all conventional rotary, except for short intervals of core taken in areas of interest. For example in the Roberts #1 potash test well (also known as White Cloud #1) core was drilled in 1959 from 3870 to 3890 feet (1180-1186m) and from 3940 to 4074 feet (1230-1242m) and collected an interval of potash mineralization from 4034 to 4045 feet (1230-1234m). Circulation fluid was described as a salt base-diesel emulsion mud saturated with sodium chloride and containing 34 percent diesel oil, and thirty-five sacks of muriate of potash had been added to a mud volume of 450 barrels (Root, 1959). Cores were almost certainly cut in other wells, but the data is not available at this time. Core from the potash horizons was mentioned in the Reeder #1 well in the Whipsaw area, drilled in 1942 (Evans, 1956)

## **12.0 SAMPLING METHOD AND APPROACH**

### **12.1 Drilling Mud Sampling**

Drilling mud samples from oil and gas wells are generally sampled for lithologic logging, but are not systematically sampled for assay or analysis, except in specific zones of interest, such as potash intervals. Normally the cuttings would be screened from the mud and washed to allow description of the details of the lithology. A small sample might be retained for analysis.

### **12.2 Core Sampling**

There is very little information regarding core sampling. In the case of the Roberts #1 hole described above, the 2.25 inch (5.72 cm) diameter (NX) potash-bearing core was cut into halves using a bandsaw. One half was split again into two quarters. One quarter was shipped for analysis and the rest retained for reference. Sample interval lengths varied from 7.8 to 19.4 mm (Root, 1959).

## **13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY**

### **13.1 Sample Preparation and Analytical Procedures**

The author is unaware of sample preparation and assay procedures used in any sampling done in the oil and gas wells. No information regarding procedures has survived.

### **13.2 Security**

Security protocols were not stated by any of the prior operators on the properties or are not available.

## **14.0 DATA VERIFICATION**

## **14.1 Quality Control**

None of the prior project area operators discussed quality control procedures.

## **14.2 Historic Drilling Survey Data**

All of the historic drill hole collars were surveyed as they were completed and their locations are tabulated in Tables 9.2a-1, 9.2b and 9.2c. Location data are preserved in the Utah Geologic Survey files.

## **15.0 ADJACENT PROPERTIES**

Intrepid Potash Inc. is successfully operating the Cane Creek solution potash mine which is located approximately 6 miles (9.65km) southwest of Moab. The operation was started by Texas Gulf in 1965 as a conventional room and pillar potash mine in the Cycle 5 potash horizon, approximately 3000 feet (915m) below the surface. The underground mine had many problems and was difficult to operate. After developing over 170 miles (560 km) of underground workings the mine was intentionally flooded in 1970 and subsequently operated as a solution mine. A brine withdrawal pipe was placed at the lowest point in the mine and a series of 12 drill holes were drilled into various parts of the mine. Water from the nearby Colorado River is pumped into the mine at an average rate of 2000 gpm (8800 lpm) for approximately 7 months out of the year. Flow rates were adjusted to maintain a saturated brine withdrawal. It is estimated that the water residence time in the mine is between 300 and 350 days. The saturated brine is pumped to 2.5 ft (0.76m) deep solar evaporation ponds to crystallize both salt and potash. Evaporation rates are in the order of 3.3 ft (1m) per year. Material from the ponds is sent to a flotation plant for separating and refining both the salt and the sylvite. Current output of the plant is between 700 and 1000 tons (600 and 900 tonnes) of potash per day (Intrepid Potash website). Intrepid purchased the Cane Creek Mine from Texas Gulf in 2000. Since that time they have also been exploring the Cycle 9 potash horizon, approximately 800 ft (240m) below Cycle 5, to assess the possibility of solution mining that as well (Allen, 2009).

American Potash LLC controls a large area of potash exploration permits located between Mesa's White Cloud and Salt Wash areas. Applications were filed in 2008.

## **16.0 MINERAL PROCESSING AND METALLURGICAL TESTING**

### **16.1 Ore Description**

The raw product resulting from either collecting the super-saturated brines or solution mining the potash beds will be nearly the same. It will be a fluid with a very high content of dissolved solids, principally potassium chloride, magnesium chloride, and calcium chloride along with lithium, boron, bromine and other minerals, with a total of perhaps as much as 30 to 40% total dissolved solids.

## **16.2 Metallurgy**

There has been no metallurgical work done by Mesa Exploration at the Utah Potash Project to date.

There are two standard approaches to recovery of the dissolved solids. In most potash mining operations worldwide, including the adjacent Cane Creek potash mine, the mineral-bearing water is pumped to large shallow ponds where most of the water is removed by solar evaporation. The precipitated salts are then harvested from the ponds using belly-scrapers. The salts are then ground finely and mixed with saturated brine, which is pumped in slurry form to the treatment plant. The material is then processed by selective flotation to produce a potash concentrate. This is dried and shipped. Other mineral products may be produced as well, depending on their concentration in the solutions.

Alternatively, the individual minerals can be removed by chemical precipitation under controlled pressure and temperatures. Some of the other elements such as bromine and boron may be collected from the concentrated brines using absorptive resins.

It will be necessary to do metallurgical process testing to determine the appropriate recovery techniques for the each of the areas of the Utah Potash project.

## **17.0 MINERAL RESOURCE ESTIMATE**

Mesa Exploration Corporation has not calculated a mineral resource for the Utah Potash Project. The historic estimates for the White Cloud and Whipsaw areas are discussed in section 6.1. There are no historic resource estimates for the Salt Wash area. In general Mesa Uranium Corporation believes that the historical resources discussed in that section is a reasonable estimate in a general sense based on the data available. However, this estimate cannot be verified, as insufficient data is currently available to allow it to be NI 43-101 compliant, and this data should not be relied upon, and Mesa is not treating it as reliable. Mesa Uranium Corporation plans additional drilling and modeling to move toward calculating an NI 43-101 compliant resource.

## **18.0 MINERAL RESERVE ESTIMATE**

No reserves were calculated in this study.

## **19.0 OTHER RELEVANT DATA AND INFORMATION**

Between 2008 and April 2011, Mesa Exploration has expended a total of approximately \$275,000 on land acquisition and maintenance, and on data acquisition and review.

The author is unaware of additional information concerning the Utah Potash Project that is pertinent to this technical report.

## **20.0 INTERPRETATIONS AND CONCLUSIONS**

The author has reviewed the available Utah Potash Project data, and has visited the site. He believes that the data presented by Mesa Exploration Corporation provides an accurate and reasonable representation of the Utah Potash Project.

From his review of the available data, it is apparent to the author that the mineralization exists as has been represented by prior workers. There is a substantial, although not well defined resource present in the Utah Potash Project area as shown by the drilling, sampling and geologic modeling done by prior operators on the property, and in publications by the US Geologic Survey, the US Bureau of Mines and the US Bureau of Land Management. Historic resource estimates are not NI 43-101 compliant. A substantial amount of work and expenditures will be necessary in order to generate a resource figure for the Utah Potash Project that is NI 43-101 compliant.

As a result of a review of current prices and near-term market projections for the anticipated products, as well as the proven recovery technology used at the adjacent Cane Creek mine and others, it is the author's opinion that this property has a reasonable likelihood of being profitably exploited.

## **21.0 RECOMMENDATIONS**

The available data from the area of the Utah Potash Project is a strong indication of the potential for it to become a producer of potash and potentially other products. In order to confirm those indications, additional work will be necessary.

Mesa Exploration has only reviewed some of the drill logs, largely from the White Cloud the area. It would benefit them to acquire and study many of the logs from all three areas to better define the distribution and thicknesses of the target stratigraphic horizons in each exploration area. Chemical analyses are currently available for only a few holes, but may become available for several others. This also needs further investigation.

Several generations of seismic data have been collected during the course of oil and gas exploration, but with a focus on the oil and gas potential. Acquisition and reprocessing of the data with emphasis on the potash and brine horizons as well as structural offsets will aid in the development of a 3-D geologic model.

Preliminary process engineering studies need to be done regarding potential recoveries of potash and other commodities from the brines. Reservoir modeling should be part of this effort in regard to exploiting the supersaturated brines.

The drilling of at least one well in each target area should be considered for exploration and possible production. They should be designed to sample the Clastic Zone 31 brine and the potash #5 and #13 horizons (and any others encountered in drilling), which are those currently being mined at Intrepid Minerals' Cane Creek potash mine and being explored for at American Potash's project between the White Cloud and Salt Wash areas.

## **21.1 Utah Potash Project Budget - 2011**

Until the potash exploration applications are approved by the Bureau of Land Management, the amount of physical work that Mesa Exploration intends to do on the properties is limited. It is Mesa's intention to continue data compilation and interpretation from previous work in the area, primarily oil and gas wells and surveys during 2011. Upon approval of the applications, a more comprehensive program is anticipated. The program would cost approximately \$6.5 million and would include 3D modeling of the potash horizons and drilling at each of the three project areas.

The 2011 budget for data compilation and interpretation is \$30,000.

## 22.0 REFERENCES

- 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.
- Doelling, H.H., 2001, Geologic Map of the Moab and Eastern Part of the San Rafael Desert 30' x 60' Quadrangles, Grand and Emery Counties, Utah and Mesa County, Colorado. Utah Geologic Survey Map #180, scale 1:100,000.
- Doelling, H.H., Chidsey, T.C., and Benson, B.J., 2010, Geology of Dead Horse Point State Park, Utah, *in* Geology of Utah's Parks and Monuments, Utah Geological Association Publication 28 (Third Edition), Sprinkel, Chidsey and Anderson, Editors, page 413.
- Durgin Dana C., 2011, Technical Report, Geology and Mineral Resources, Green Energy Project, Grand County, Utah, USA. Report for Mesa Exploration Corporation.
- Evans, David L., 1956, A Preliminary Appraisal of Solution Mining Possibilities, Paradox Salt Section, Thompsons-Crescent Junction Area, Grand County, Utah. Private Report for Mr. L.B. Fisher.
- Gatten, O.J., 2008a, Salt Wash Potash Project, Grand County Utah, Mesa Exploration Internal Report, 31 pages.
- Gatten, O.J., 2008b, White Cloud Potash Project, Grand County Utah, Mesa Exploration Internal Report, 40 pages.
- Gatten, O.J., 2008c, Whipsaw Potash Project, Grand County Utah, Mesa Exploration Internal Report, 31 pages.
- Gwynn, Wally, 2008, Various Reports and Letters Regarding the White Cloud Property, Grand County, Utah, Utah Geologic Survey files, 67 pages.
- Hite, R.J., 1960, Stratigraphy of the Saline Facies of the Paradox Member of the Hermosa Formation of Southeastern Utah and Southwestern Colorado: Four Corners Geological Society Guidebook, 3<sup>rd</sup> Field Conference, p 86-89.
- Hite, R.J., 1961, Potash-bearing Evaporite Cycles in the Salt Anticlines of the Paradox Basin, Colorado and Utah: USGS Professional Paper 424-D, p D135-138.
- Hite, R.J., 1976, A Potential Target for Potash Soutlion Mining in Cycle 13, Paradox Member, Near Moab, Utah. USGS Open-File Report 76-755, US Department of The Interior, Geological Survey.
- Intrepid Potash Inc website discussion of the Cane Creek Solution Mine  
<http://www.intrepidpotash.com.loc/moab.html>

- Jackson, Daniel Jr., 1973, Solution Mining Pumps New Life into Cane Creek Potash Mine, Engineering and Mining Journal, July 1973.
- Mayhew, E.J. and Heylman, E.B., 1965, Concentrated Subsurface Brines in the Moab Region: Utah Geological Survey Special Studies 13, June 1965, 30 pages.
- Mayhew, E.J. and Heylman, E.B., 1966, Complex Salts and Brines of the Paradox Basin, Second Symposium on Salt, Volume 1, Ohio Geological Society.
- Peterson, J.A., 1956, ed., Geology and Economic Deposits of East Central Utah: Intermountain Association of Petroleum Geologists, Seventh Annual Field Conference Guidebook, 226 pages.
- Root, R.L., 1959, Evaluation of Potash Core, Potassium Prospecting Permit U-618214, J.E. Roberts (White Cloud) Govt. No. 1 Potash Test Well, (in Gwynn 2008).
- Tabet, David E., 2005, Mineral Potential Report for the Moab Planning Area. Moab Field Office, US Department of the Interior, Bureau of Land Management, 83 pages.
- US Department of the Interior, Bureau of Land Management, Land Recordation, LR 2000 Public Reports Database:  
<http://www.blm.gov/landandresourcesreports/rptapp/report> filter.cfm
- Utah Division of Oil, Gas and Mining Website. Source of Oil & Gas Well Logs.  
<http://www.oilgas.ogm.utah.gov/DataCenter/LiveDataSearch/logs.htm>
- Wiegand, D.E., 1981, ed., Geology of the Paradox Basin: Rocky Mountain Association of Geologists Guidebook, 285 pages.
- Williams, Paul L., 1964, Geology, Structure and Uranium Deposits of the Moab Quad, Colorado and Utah, USGS Miscellaneous Geologic Investigations Map I-360.
- Wilson, Foster, 2010, Green Energy Lithium Project, Grand County, Utah, In-house Report for Mesa Exploration, 11 pages.

## 23.0 DATE AND SIGNATURE PAGE

Dana C. Durgin, CPG 10364  
Reno, Nevada April 30, 2011



## 22.0 CERTIFICATE OF AUTHOR

I, Dana C. Durgin, do hereby certify that:

1. I am Principal Geologist of: Delve Consultants, 2881 Fargo Way, Sparks, Nevada, USA 89434
2. I graduated with a degree in Geology from Dartmouth College in 1970. In addition, I obtained a Masters Degree in Geology from the University of Washington in 1972.
3. I am a member of the American Institute of Professional Geologists (CPG #10364), a Registered Professional Geologist in Wyoming (PG-2886), and a member of the Geological Society of Nevada.
4. I have worked as a geologist for a total of 37 years since my graduation from university. I have completed several NI 43-101 Technical Reports for projects in Mexico and the USA.
5. I have read the definition of “Qualified Person” in National Instrument 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.
6. I reviewed the data and authored the report. I am responsible for the preparation of the entire technical report titled “Technical Report, Geology and Mineral Resources, Utah Potash Project, Grand County, Utah”, dated April 30, 2011, for Mesa Exploration Corporation, based upon my critical review of current and historical technical information.
7. I visited the Utah Potash Project site on February 21 and 22, 2011. I have had no prior involvement with the property that is the subject of this report.
9. 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.
10. I am independent of the issuer and have no financial or material interests in the property or with Mesa Exploration Corporation.
11. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
12. I consent to the use and public filing of this Technical Report prepared for Mesa Exploration Corporation, and to the filing of extracts from or a summary of the Technical Report in the written disclosure of Mesa Exploration Corporation as required, and confirm that it fairly represents the data of the Utah Potash Project.

Dated this 30th day of April 2011.

Dana C. Durgin