



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
White River Resource Area  
220 East Market  
Meeker, Colorado 81641



In Reply Refer To:  
LLCON050

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RECEIVED

APR 04 2016

Natural Soda Inc.  
Attention: Kirk Daehling  
3200 County Rd. 31  
Rifle, Colorado 81650

GRAND JUNCTION FIELD OFFICE  
DIVISION OF  
RECLAMATION MINING & SAFETY

Dear Mr. Daehling:

We have reviewed your January 12, 2016 request to conduct a resource definition drilling program for up to 10 drill locations on Natural Soda Inc.'s existing sodium leases. The proposed project is located in Township 1 South, Range 98 West; Section 35, Lot 1, of the 6<sup>th</sup> P.M. The drilling program is approved with the attached conditions of approval (COA). Also attached is a copy of the drilling program with topographic and aerial maps of the approved access routes and drill hole area locations which includes changes made to access routes from the original submission. Please take a careful look at the signed attached map and COA; specifically COA Number 2 requiring an Application for Permit to Drill (APD) for each hole to be drilled and COA Number 44 which requires a right-of-away for the project's off-lease access.

Additional bonding to include the estimated reclamation costs of the holes, pads and access is required. This additional bonding requirement will be determined in coordination with the Colorado Division of Reclamation, Mining and Safety and sent to you at a future date. You will be also billed by our office for the wood products removed during the construction of the project. If there are any questions, please contact Paul Daggett, Mining Engineer at (970) 878-3819.

Sincerely,

Kent Walter  
Field Manager

Enclosures

Conditions of Approval for Natural Soda Resource 2016 Drilling Program  
Natural Soda LLC 2016 Resource Drilling Program

cc:

Travis Marshall  
Grand Junction Field Office  
Colorado Division of Reclamation, Mining and Safety  
101 South 3<sup>rd</sup>, Suite 301  
Grand Junction, CO 81501

Daub & Associates, Inc.  
1985½ South Broadway  
Grand Junction, CO 81507-9649

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## Conditions of Approval for Natural Soda Resource 2016 Drilling Program

### General

1. All operations will conform to Natural Soda's approved Mine and Reclamation Plans.
2. NS shall submit an Application for Permit to Drill (APD) prior to any surface disturbing activities for each hole to be drilled. The APD shall contain, at a minimum; construction layout with drill hole location, contours, cut and fills, top soil stock piles, approximate disturbance area, and stormwater features. Also include a cross section of the pad.

### Air Quality

3. The operator will limit unnecessary emissions from point or nonpoint pollution sources and prevent air quality deterioration from necessary pollution sources in accordance with all applicable state, federal and local air quality law and regulation.
4. The operator will treat all access roads with water during construction and drilling activities so that there is not a visible dust trail behind vehicles. The use of chemicals or treated produced water as a dust suppressant on BLM lands will require prior written approval from BLM.

### Soils

5. In order to protect public land health standards for soils, erosion features such as rilling, gullying, piping and mass wasting on the surface disturbance or adjacent to the surface disturbance as a result of this action will be addressed immediately after observation by contacting the Authorized Officer and by submitting a plan to assure successful soil stabilization with BMPs to address erosion problems.

### Vegetation

6. Successful reclamation must reflect a plant community of at least five desirable plant species where no one species may exceed 70 percent relative cover and desired foliar cover, bare ground, and shrub and/or forb density must have 80 percent similarity in relation to the identified desired plant community.

### Invasive, Non-Native Species

9. Application of herbicides must comply with the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environments Impact Statement* (EIS), and the WRF0 Integrated Weed Management Plan (DOI-BLM-CO-110-2010-0005-EA).

10. All seed, straw, mulch, or other vegetative material to be used on BLM and split-estate lands will comply with United States Department of Agriculture (USDA) state noxious weed seed requirements and must be certified by a qualified Federal, State, or county office as free of noxious weeds. Any seed lot with test results showing presence of State of Colorado A or B list species will be rejected in its entirety and a new tested lot will be used instead. All areas identified to be disturbed under this proposal will be monitored and treated for noxious weeds on an annual basis for the life of the project until Final Abandonment has been approved by the Authorized Officer.

11. Pesticide Use Proposals (PUPs) must be submitted to and approved by the BLM before applying herbicides on BLM lands. The PUP will include target weed species, the herbicides to be used, application rates and timeframes, estimated acres to be treated, as well as maps

depicting the areas to be treated and known locations of weeds. The WRFO recommends that all PUPs be submitted no later than March 1<sup>st</sup> of the year anticipating herbicide application.

#### Terrestrial Wildlife

12. Activities (construction, drilling etc.) associated with the Proposed Action will be conducted outside of the big game critical winter period of December 1 – April 30. Construction activities will be allowed from May 1 – November 30.

#### Cultural Resources

13. NS is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
14. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. NSI will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. NSI under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
15. Pursuant to 43 CFR 10.4(g), the NSI must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), NSI must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

#### Paleontological Resources

16. NSI is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate or other scientifically important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
17. If any paleontological resources are discovered as a result of operations under this authorization, NS and/or any of his agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

18. Any excavations into the underlying native sedimentary stone must be monitored by a permitted paleontologist. The monitoring paleontologist must be present before the start of excavations that may impact bedrock.

#### Hazardous or Solid Wastes

19. Comply with all Federal, State and/or local laws, rules and regulations addressing the emission of and/or the handling, use, and release of any substance that poses a risk of harm to human health or the environment. All spills or leakages of oil, gas, produced water, toxic liquids or waste materials, blowouts, fires, shall be reported by the operator in accordance with the regulations and as prescribed in applicable orders or notices.
20. Where required by law or regulation to develop a plan for the prevention of releases or the recovery of a release of any substance that poses a risk of harm to human health or the environment, provide a current copy of said plan to the BLM WRFO.
21. All substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers. Fluids that pose a risk of harm to human health or the environment, including but not limited to produced water, shall be stored in appropriate containers and in secondary containment systems at 110% of the largest vessel's capacity. Secondary fluid containment systems, including but not limited to tank batteries shall be lined with a minimum 24 mil impermeable liner.
22. Construction sites and all facilities shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
23. As a reasonable and prudent lessee, acting in good faith, all lessees and right-of-way holders will report all emissions or releases that may pose a risk of harm to human health or the environment, regardless of a substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO (970) 878-3800.
24. As a reasonable and prudent lessee and right-of-way holder, acting in good faith, all lessees and right-of-way holders will provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any substance that may pose a risk of harm to human health or the environment, regardless of that substance's status as exempt or non-exempt. Where the lessee/operator or right-of-way holder fails, refuses or neglects to provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any quantity of a substance that poses a risk of harm to human health or the environment, the BLM WRFO may take measures to clean-up and test air, water (surface and/or ground) and soils at the lessee/operator's expense. Such action will not relieve the lessee/operator of any liability or responsibility.

#### Fire Management

34. When working on lands administered by the BLM WRFO, notify Craig Interagency Dispatch (970-826-5037) in the event of any fire.
  - a. The reporting party will inform the dispatch center of fire location, size, status, smoke color, aspect, fuel type, and provide their contact information.
  - b. The reporting party, or a representative of, should remain nearby, in a safe location, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.

35. The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not endangered and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used the applicant must notify incoming fire resources on extinguisher type and the location of use.
36. Natural ignitions caused by lightning will be managed by Federal fire personnel. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.
37. Piled vegetation retained for reclamation as part of forest management mitigations shall be located at least twenty five feet from other receptive fuels.

#### Forest Management

38. In accordance with the 1997 White River RMP/ROD, all trees removed in the process of construction shall be purchased from the BLM. Trees should first be used in reclamation efforts and then any excess material made available for firewood or other uses.
39. Woody materials required for reclamation shall be removed in whole with limbs intact and shall be stockpiled along the margins of the authorized use area separate from the topsoil piles. Once the disturbance has been re-contoured and reseeded, stockpiled woody material shall be scattered across the reclaimed area where the material originated. Redistribution of woody debris will not exceed 20 percent ground cover. Limbed material shall be scattered across reclaimed areas in a manner that avoids the development of a mulch layer that suppresses growth or reproduction of desirable vegetation. Woody material will be distributed in such a way to avoid large concentrations of heavy fuels and to effectively deter vehicle use. Woody materials that are to be stockpiled along margins and not used in the topsoil should not exceed pile dimensions of 8 x 8 x 8 feet. Materials used in the stockpiles should be a variety of diameters, but should be no smaller than 6 inches in diameter. Additionally the piles should be no less than 30 feet apart.
40. Trees that must be removed for construction and are not required for reclamation shall be cut down to a stump height of 6 inches or less prior to other heavy equipment operation. These trees shall be cut in four foot lengths (down to 4 inches diameter) and placed in manageable stacks immediately adjacent to a public road to facilitate removal for company use or removal by the public.

#### Rangeland Management

41. Any range improvement projects such as fences, water developments, cattleguards, gates, or other livestock handling/distribution facilities that are damaged or destroyed either directly or indirectly as a result of implementation of the Proposed Action shall be promptly (at least prior to the livestock grazing permittee's need to utilize the range improvement) be repaired or replaced by the operator to restore it to at least its pre-disturbance functionality.
42. If the operator damages any range improvement project(s) the operator will notify the Authorized Officer through Sundry Notice (Form 3160-5) and identify the actions taken to repair the feature(s).

#### Realty Authorizations

43. NS will effectively coordinate with existing ROW holders prior to construction activity.
44. A right-of-way is required for the off lease portion of the southern access route from Rio Blanco County Road 83 to lease boundary of COC0119986-01.

45. At least 90 days prior to termination of the ROW, NS shall contact the Authorized Officer to arrange a joint inspection of the ROW. The inspection will result in the development of an acceptable termination and rehabilitation plan submitted by the holder. This plan shall include, but is not limited to, removal of facilities, drainage structures, and surface material (e.g., gravel or concrete), as well as final re-contouring, spreading of topsoil, and seeding. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.

46. For the purpose of determining joint maintenance responsibilities, NS shall make road use plans known to all other authorized users of the road. Upon request, the Authorized Officer shall be provided with copies of any maintenance agreement entered into.

Access and Transportation

47. All construction activity shall cease when soils or roads surfaces become saturated to a depth of three inches unless approved by the Authorized Officer.





**APPROVED**  
BY: *Ken F. White*

DATE: *03/29/2016*  
WHITE RIVER FIELD OFFICE MANAGER

**Natural Soda LLC**  
**2016 Resource Drilling Program (RDP)**

Prepared for  
**Natural Soda LLC**  
by  
**Daub & Associates, Inc.**  
Grand Junction, CO

**Introduction**

Natural Soda LLC (NS) is proposing a 10 well Boies Bed, nahcolite resource definition exploration program critical to NS's planning and future development. The wells will be either cored or rotary drilled and logged. They will be drilled to further define the thickness and areal extent of the Boies Bed nahcolite, halite facies, and other saline mineral intervals in the Parachute Creek Member of the Green River Formation. Ideally, only four to six wells would need to be drilled. If further data is required to sufficiently evaluate the resource, up to 10 wells may be drilled. The majority of the wells that are actually drilled will be plugged and abandoned, and the associated disturbance immediately reclaimed. A few of the wells may be completed as groundwater monitoring wells and/or subsurface subsidence monitoring wells, as applicable.

**Rotary/Core Hole Locations**

The proposed rotary/core holes are located within the 160 acre NS federal sodium lease modification area. The well/pad locations will be scouted, staked, and photographed. Pre-existing disturbance, ease of access, density of vegetation, and topographic relief were considered while staking the locations to lessen the environmental impact and surface disturbance of the operations. NS would like to be able to plan for and permit two drill holes per location; an initial rotary/core hole and a contingency hole. The contingency hole would only be drilled if it is determined more data is needed in the immediate vicinity, i.e. if halite is found where only nahcolite was predicted or vice versa. The contingency hole may also be drilled if unexpected operational problems are experienced

while drilling the initial core hole; for example, core is lost, the coring bottom hole assembly (BHA) is lost downhole, the hole is lost, etc. It should be noted that, to date, NS has not needed to re-drill a hole due to operational problems.

The typical pad disturbance, including cut and fill slopes, will be 0.5 to 0.7 acres. The pad locations may require a maximum 1.5 acre well pad (depending on well location) to allow sufficient space to skid the rig over and drill a contingency hole if needed. NS does not intend to disturb the entire 1.5 acres. If a contingency hole is needed due to operational or other problems, NS would make every effort to utilize the existing pad (typically 0.5 to 0.7 acres) without creating additional disturbance. Strategies to avoid creating additional disturbance include drilling wells which are offset from the center of the well pad (Figure 2). This strategy should allow the drill rig to skid a short distance from the original core hole if a contingency (re-drill) hole became necessary. Again, it should be noted that, to date, NS has not needed to re-drill a hole due to operational problems. Minimization of cut and fill was taken into consideration when choosing locations. Topsoil will be stored immediately adjacent to location, covered and clearly marked. NS does not intend to disturb any more surface area than is necessary.

Access roads will be approximately twelve feet wide, and utilize pre-existing roads wherever possible. The locations will be accessible from the Yellow Creek Jeep Trail (RBC 83) and from RBC 31 (see Figure 1). Due to the temporary nature of the locations, NS is not planning on using hauled in materials to construct the access roads, only native material. Accesses will be designed to reduce disturbance of forested areas and existing drainages. All of the proposed locations are located in sage brush parks, and not forested areas. Access will be cut at the edge of forested areas whenever possible to minimize tree damage and disturbance. The utilization of an alternate route could occur if, for example, it is determined that a proposed well or wells are not needed and the alternate route could provide access with less disturbance.



**Drilling, Abandonment, and/or Completion**

Most of the proposed rotary/core holes will be drilled and immediately plugged and abandoned. The typical coring target interval will be from 10 to 20 feet above the Dissolution Surface (DS) to 10 to 20 feet below the bottom of the Boies Bed. If the hole is cored, the intermediate hole interval will be rotary drilled and temporarily cased using a 4.5 inch scab liner. The coring medium will be a saturated brine of sodium chloride and/or sodium bicarbonate to minimize saline mineral losses from the target interval due to drilling induced dissolution. The brine drilling fluid will be collected in lined pits or containers and transported to an appropriate facility or the NS pond if in excess of 5,000 ppm TDS. The target interval may be cored, and then the scabliner will be removed and the well will be plugged and abandoned by cementing the hole to surface. The core sample size will be HQ, 2.5 inch, with a hole size of approximately 3.83 inch. An alternate method to gather resource data would be to rotary drill the holes to TD and simply run a geophysical logging suite to determine the resource extent.

A select few core holes may be completed as groundwater and/or subsurface subsidence monitoring wells. Typical construction would compliment the core drilling operations. The scabliner would be removed, a cement plug set from core hole TD to the bottom of the interval to be monitored, and the well would be sanded back across the monitored interval, cased and cemented (Figure 3). NS will use the same drilling, coring, and completion procedures specified in the BLM approved 2014 NS RDP.

NS wishes to complete these wells in a timely fashion during 2016. It is important to note that NS will most likely not drill all 10 holes. Holes will be omitted if the data collected is sufficient to model the nahcolite resource and facies intervals accurately.

**Reclamation**

Reclamation will be achieved through methods described in the NS Mine Plan. Locations have been chosen to reduce disturbance. Topsoil will be stored immediately adjacent to location, covered and clearly marked. Following completion of all operations on a location, the pad will be recontoured to reflect the original topography. Topsoil will be reapplied, and a seed mix will be distributed per the NS Mine Plan. The access road will also be recontoured, the topsoil redistributed, and seeded in the same manner. If the hole on the location is to be completed as a monitoring well, the location and access will be interim reclaimed so that only the minimum required access is maintained. Interim reclamation will consist of recontouring the pad and access, distributing topsoil, and seeding, while maintaining access adequate for sampling the well.

Once the location is reclaimed or interim reclaimed, a fence with gated access will be installed to limit grazing access and allow seeding to cultivate. If fully reclaimed, the location will begin a six year biological monitoring program as per the BLM Record of Decision (ROD). After the six years, if the location meets the requirements set in the ROD, it may be then considered for bonding release.

**Timing**

NS wishes to begin drilling the holes as early as possible in 2016. Location and access construction would be done concurrently with drilling; as a pad location is completed, the rig will move on and core, while the dirt moving equipment moves to the next location. Individual pad building is expected to take one or two days, and drilling and coring the well may take 5 to 7 days. Barring contingencies, it is thought that dirt work, drilling/coring, and abandonment would take approximately 3 months for this exploration program. This allows for approximately 10 days per well. The operations are projected to end no later than fall of 2016.

Completion of the drilling program may extend over a three year period. (per Jerry Daub)

Table 1 List of Proposed NS 2016 Resource Exploration Well Locations

	NAD27 Northing	NAD27 Easting	NAD83 Lat	NAD83 Long
2016 RDP-1	228191.7	1199440.1	39.924372209	108.355474354
2016 RDP-2	228431.7	1199623.3	39.925046910	108.354849025
2016 RDP-3	228593.7	1199837.3	39.925510310	108.354104969
2016 RDP-4	228941.4	1200054.4	39.926483505	108.353371155
2016 RDP-5	229039.5	1200379.6	39.926781381	108.352223448
2016 RDP-6	228666.5	1200273.1	39.925748538	108.352560224
2016 RDP-7	228938.9	1199780.2	39.926452431	108.354348068
2016 RDP-8	229143.8	1199199.8	39.926963354	108.356440036
2016 RDP-9	228906.1	1199169.7	39.926308490	108.356520012
2016 RDP-10	228046.0	1200082.7	39.924029193	108.353167602

















Daggett, Paul <pdaggett@blm.gov>

**Re: Changes to Access for 2016 RDP**  
1 message

Daub, Gerald <gjdaub@daubandassociates.com>  
To: "Daggett, Paul" <pdaggett@blm.gov>

Wed, Mar 16, 2016 at 4:45 PM

Paul:  
We are good to go with those minor road modifications.  
Thank you.  
Do you have any time next week to sit down and discuss the restrictions associated with the NS leases?

Regards,  
Jerry

Jerry Daub, PG, CPG  
Daub & Associates, Inc.  
1985 1/2 South Broadway  
Grand Junction, CO 81507

<http://www.daubandassociates.com>  
(970) 254-1224 (phone)  
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[gjdaub@daubandassociates.com](mailto:gjdaub@daubandassociates.com)

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On Wed, Mar 16, 2016 at 9:15 AM, Daggett, Paul <pdaggett@blm.gov> wrote:  
Jerry,

Attached is a map of suggested minor changes to the access for the 2016 RDP. These changes would limit new disturbances and take advantage of a two-track along an existing powerline/fence line. Also included is the construction RDP 8 and 9 without the removal of trees.

Please let me know if NS agrees to the changes and I will included it the proposed action.

3/28/2016

DEPARTMENT OF THE INTERIOR Mail - Re: Changes to Access for 2016 RDP

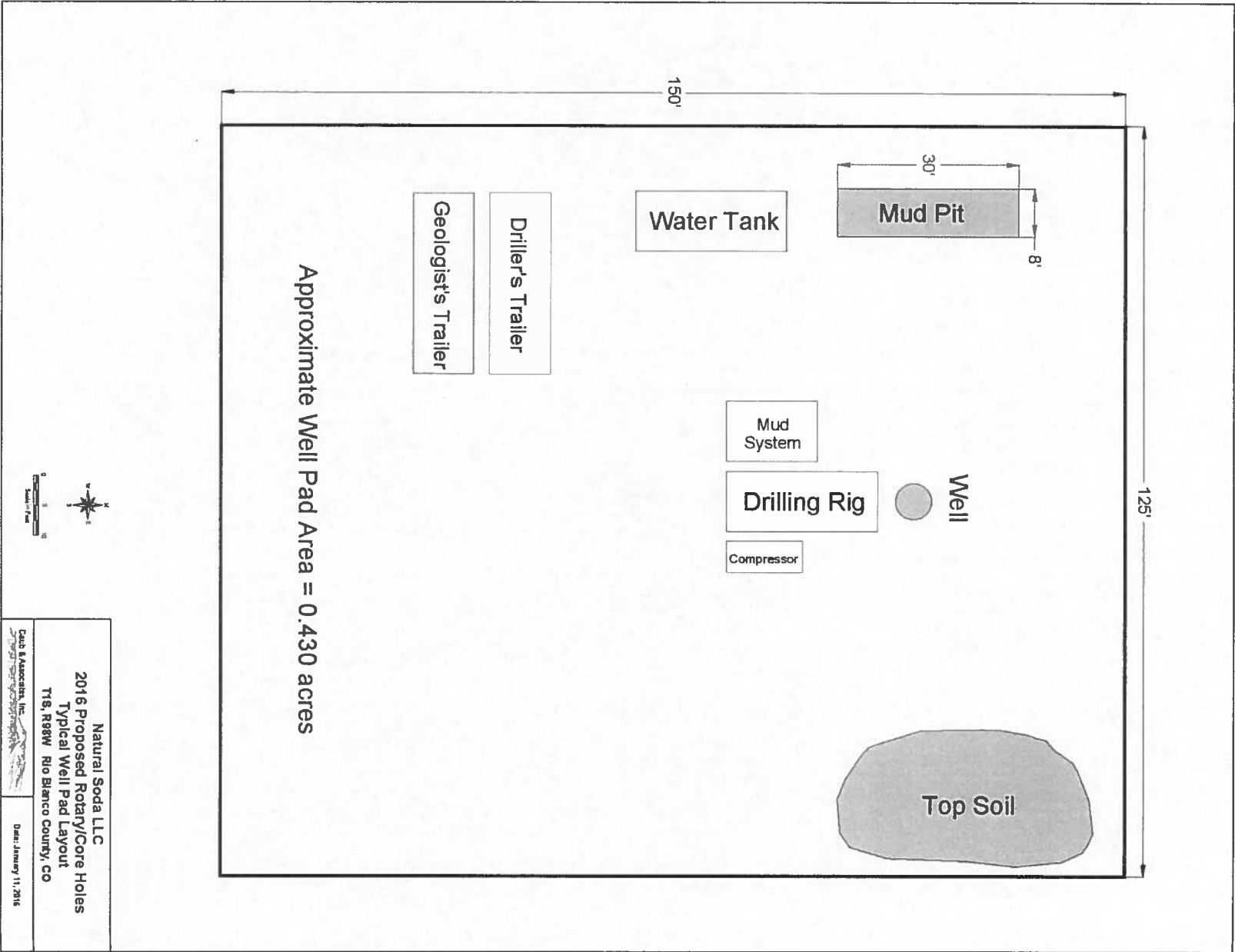
Thanks  
Paul















Well: Proposed  
API: TBD  
Section: 35  
Township: 1S  
Range: 98W  
Hole Type: Typical Rotary Only or Rotary/Spot Core and Hydrologic Monitoring Well  
Elevation: 6725, est.  
Top of Conductor Casing, ft.  
Date: 1/12/2016  
All stratigraphic depths estimated. Actual depths to be determined from core and/or geophysical logs.

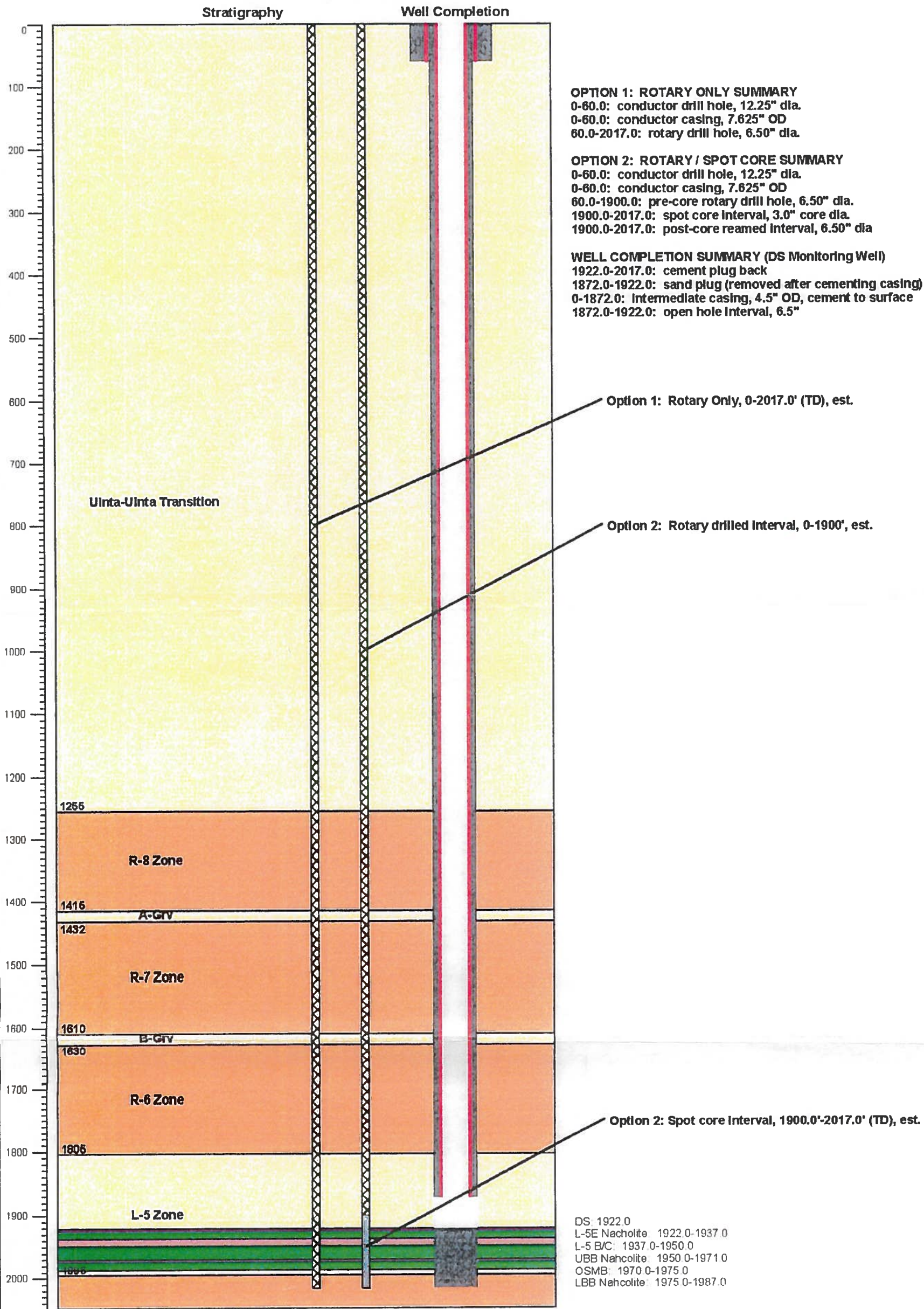


Figure 3: Typical Rotary/Core Hole and Well Completion Diagram

