

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
Artesia, NM 88210SUBMIT IN TRIPLICATE?  
ON REVERSE SIDEFORM APPROVED  
OMB NO. 1004-0136  
Expires: February 28, 19956. LEASE DESIGNATION AND SERIAL NO.  
771 out of NM 0255038. IF INDIAN, ALLOTTEE OR TRIBE NAME  
NAUNIT AGREEMENT NAME  
pending9. FORM OR LEASE NAME, WELL NO.  
Shugart West "24" Federal No. 110. WELL NO.  
30-015-3134011. WELL AND POOL, OR WILDCAT  
Wells, Shugart, Bone Springs, North  
SEC. T. 2, R. 3, E. 1, OF T. 2, R. 3, E. 1, AND SURVEY OF AREA

Sec. 24, T18S, R30E N.M.P.M.

12. COUNTY OR PARISH  
Eddy13. STATE  
New Mexico

## 1a. TYPE OF WORK

DRILL ☒DEEPEN ☐

## b. TYPE OF WELL

OIL  
WELL ☒GAS  
WELL ☐

OTHER

SINGLE  
ZONE ☒MULTIPLE  
ZONE ☐

## 2. NAME OF OPERATOR

KCS Medallion Resources, Inc.

## 3. ADDRESS AND TELEPHONE NO.

7130 South Lewis Avenue, Suite 700, Tulsa, OK 74136-5489. Phone (918) 499-1325

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
At SURFACE

2310 ft FSL &amp; 330 ft FEL of Section 24

At proposed prod. zone

Same

Unit I

## 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE\*

The location is about 7 miles SE of Loco Hills

10. DISTANCE FROM PROPOSED\*  
LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drg. unit line, if any)

330 ft

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLICABLE FOR, ON THIS LEASE, FT.

1044 ft

## 16. NO. OF ACRES IN LEASE

200 Acres more or less

## 19. PROPOSED DEPTH

8,500 ft

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

40 Acres

## 20. ROTARY OR CABLE TOOLS

Rotary Tools

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

3632 ft. Ground Level

## 22. APPROX. DATE WORK WILL START\*

20 August 2000

## 23. SECRETARY'S POTASH

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
26"	Sch 10, 20"	52.73 lbs.	40 to 80 ft	Ready-Mix to surface
17 1/2"	H40, 13 3/8"	48 lbs.	WITNESS	520 sacks w/additives
11"	J55, 8 5/8"	32 lbs.	*2,800 ft	680 sacks w/additives
7 7/8"	J55, 5 1/2"	15.5 & 17 lbs.	8,500 ft	480 sacks w/additives

## Procedure:

1. Drill 26 in hole and set 20 in conductor w/rat hole digger if necessary. Cement to surface
2. Drill 17 1/2 in hole to 760 ft and set 13 3/8 in casing. Cement to surface.
3. Drill 11 in hole to 2800 ft and set 8 5/8 in casing. Cement to surface.
4. Install Hydrill and BOP Stack. Test to 2750 psig.
5. Drill cement in casing to within 20 ft of shoe. Test casing to 1500 psig.
6. Drill 7 7/8 in hole through the Bone Springs formation to TD. DST as necessary.
7. Run electric logs. Shoot sidewall cores if desired.
8. If warranted, run and cement 5 1/2 in casing w/stage collar at 4300 ft. Cement to 500 ft above top zone of interest and through stage collar with sufficient slurry to fill 500 ft into the 8 5/8" surface casing.
9. Test 5 1/2 in casing to 3000 psig prior to perforation.

## Exhibits Attached:

- A. Location and elevation plat.
- B. Location Verification Map.
- C. Vicinity map.

- D. Surface Use Plan.
- E. Drilling Plan.
- F. Blow Out Preventer Diagram

- G. Typical Wellsite Layout
- H. Map of Existing Wells In Area
- I. H2S Drilling operations Plan

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED

Tom Williams

TITLE

Senior Drilling Engineer

DATE

7-20-00

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY

Richard A. Whitney

TITLE

Associate Director

DATE

9-7-00

\*See Instructions On Reverse Side

APPROVED FOR 1 YEAR

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

DISTRICT I  
P.O. Box 1990, Hobbs, NM 88241-1990

DISTRICT II  
P.O. Drawer 20, Artesia, NM 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
P.O. Box 2088, Santa Fe, N.M. 87504-2088

State of New Mexico  
Energy, Minerals and Natural Resources Department

Exhibit A

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

Form C-102  
Revised February 10, 1994  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Oil Lease - 3 Copies

JUL 17 2000

DECLARATIONS

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name SHUGART WEST 24 FEDERAL	Well Number 1
OGRID No.	Operator Name KCS MEDALLION RESOURCES, INC.	Elevation 3632

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	24	18 S	30 E		2310	SOUTH	330	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

						<b>OPERATOR CERTIFICATION</b>	
						I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.	
						Signature <i>Thomas H. Williams</i>	
						Printed Name Thomas H. Williams	
						Title Sr. Drilling Engineer	
						Date 7-17-00	
						<b>SURVEYOR CERTIFICATION</b>	
						I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.	
						Date Surveyed JULY 10, 2000	
						Signature <i>Ronald S. Edson</i>	
						Professional Surveyor RONALD S. EDSON	
						Certificate No. 3239	
						12641	
						12185	

# LOCATIC.. VERIFICATION MAP

Exhibit B



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
HACKBERRY LAKE - 10'

SEC. 24 TWP. 18-S RGE. 30-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 2310' FSL & 330' FEL

ELEVATION 3632

OPERATOR KCS MEDALLION  
RESOURCES, INC.

LEASE SHUGART WEST 24 FEDERAL

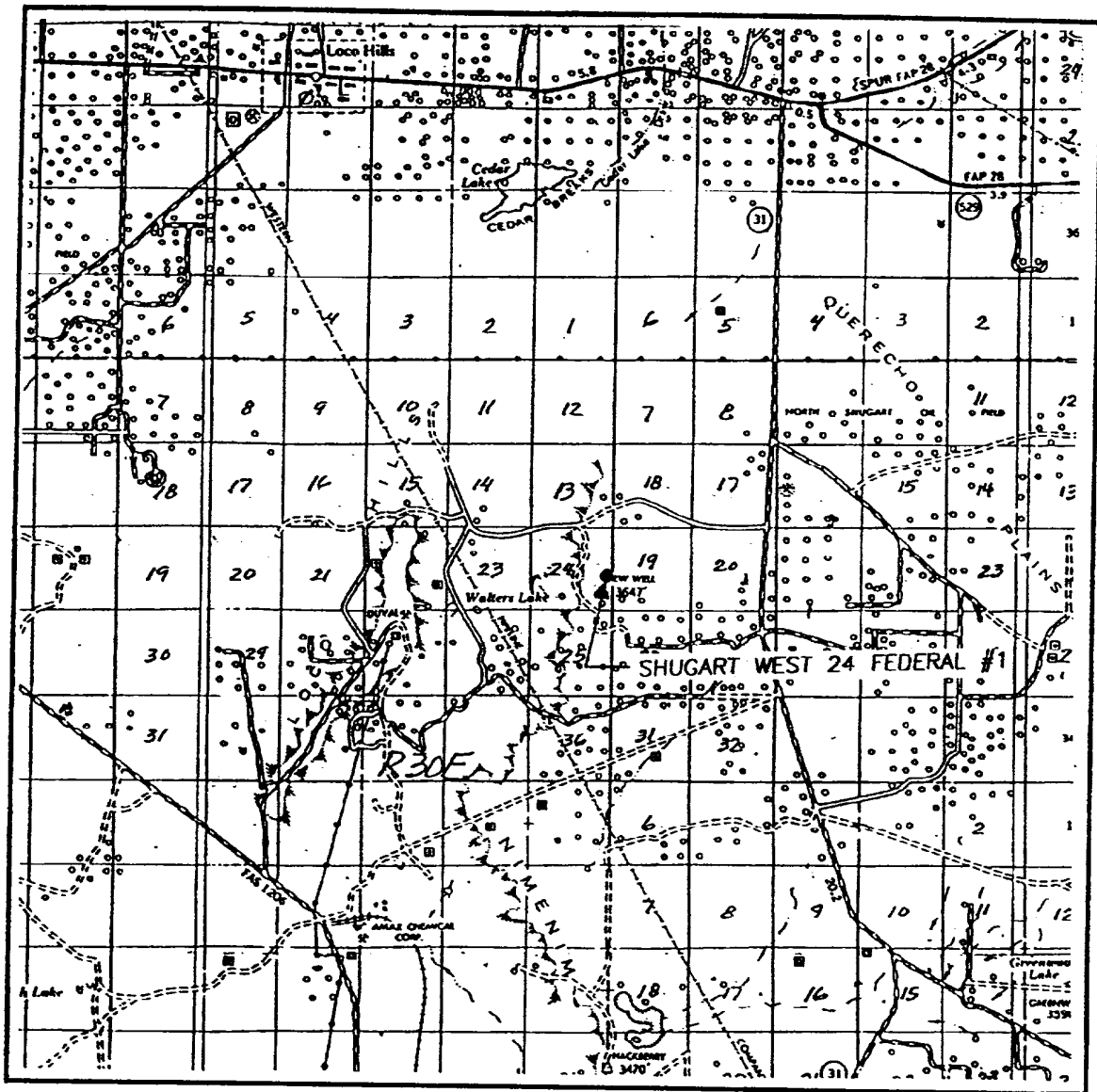
U.S.G.S. TOPOGRAPHIC MAP

HACKBERRY LAKE, N.M.

**JOHN WEST SURVEYING**  
**HOBBS, NEW MEXICO**  
**(505 393-3117)**

# VICINITY MAP

Exhibit C



SCALE: 1" = 2 MILES

SEC. 24 TWP. 18-S RGE. 30-E  
 SURVEY N.M.P.M.  
 COUNTY EDDY  
 DESCRIPTION 2310' FSL & 330' FEL  
 ELEVATION 3632  
 OPERATOR KCS MEDALLION  
 RESOURCES, INC.  
 LEASE SHUGART WEST 24 FEDERAL

JOHN WEST SURVEYING  
 HOBBS, NEW MEXICO  
 (505 393-3117)

Exhibit "D"  
Multi-Point Surface Use and Operations Plan  
**KCS Medallion Resources, Inc.**  
7130 South Lewis Avenue, Suite 700  
Tulsa, OK 74136

Shugart West "24" Federal No. 7  
2310 ft FSL & 330 ft FWL  
Sec. 24, T18S, R30E NMPM  
Eddy County, New Mexico

Lease No.: NM 93771 out of NM 025503  
Lease Description: NE/4 SW/4, N/2 SE/4 &  
N/2 NE/4 of Sec. 24

This plan is submitted with the Application for Permit to Drill the above described well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of necessary surface disturbance involved, and the procedures to be followed in rehabilitating the surface after completion of operations so that a complete appraisal can be made of the environmental effects associated with the operation.

1      Existing Roads

- A.      Exhibit "B", the Location Verification Map, is a reproduction of portion of a topographic map showing the location of the proposed well as staked with reference to the local topography and to the existing roads, wells, and other culture in the area. Exhibit "C" is a map of smaller scale showing the proposed location with reference to the major roads in the vicinity. The proposed well is located approximately 7 miles SE of Loco Hills and about 2 miles north west of the intersection of CR 222 and Grubbs Road, CP 250..
- B.      Directions: From Loco Hills go approximately 6 miles east on US 82 to the intersection of US 82 and CR222, then go south on CR222 7 miles to Grubbs Road, CP250. Turn west on CP250 and go 1.4 miles to a lease road on the north. Go north on lease road about 0.8 miles, jog left about 0.1 mile, then turn right and continue back north for approximately 0.5 miles. Turn west and follow the lease road about 0.3 of a mile to the KCS Medallion Shugart West 19 No. 7 well location. The proposed location lies about 750 ft to the west north west.

2.      Planned Access Road

- A.      Length and Width: The new road will be extended from the Shugart West 19 No. 7 well location and will be about 750 ft long and about 20 ft wide, including the shoulders. The road centerline has been flagged.
- B.      Surfacing Material: The new road will be constructed of material-in-place. If necessary the road will be surfaced with caliche.
- C.      Maximum Grade: Less than 1%
- D.      Turnouts: None should be necessary.
- E.      Drainage Design: The road will be constructed with about 4 in of crown at the centerline. Water turnouts will be constructed at 300 ft intervals.
- F.      Culverts: None appear to be necessary.

- G. Cuts and Fills: Any cut or fill on the location would be less than 3 ft.
- H. Gates and Cattle guards: None additional appear to be necessary.
- I. Right of Way: Right of Way across existing roads has been previously acquired from The Bureau of Land Management across Section 30, T18S, R31E, Eddy Co. to provide access for the drilling of the W. Shugart 19 Federal No.1, located in the SW/4 of Sec. 19, T18S, R31E. It is expected that this same ROW will be utilized for this well.

3. Location of Existing Wells

Existing wells are shown on Exhibit 'H'.

4. Location of Existing and/or Proposed Facilities

If the well is productive, production, storage, and measurement facilities will be constructed on the wellpad.

5. Location and Type of Water Supply

Plans are to purchase water for the drilling operations from a commercial supplier.

6. Source of Construction Materials

Plans call for use of material-in-place for construction. If caliche is necessary for road or pad surfacing, it would be obtained from the reserve pit. No caliche or other material will be taken from Public Land without prior approval.

7. Methods of Handling Waste Disposal

- A. Drill cuttings will be disposed of in the drilling pits.
- B. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.
- C. Water produced during testing will be stored in tanks and trucked to an approved disposal facility. Oil produced during testing will be stored in test tanks until sold.
- D. The operator will comply with current laws and regulations pertaining to the disposal of human waste.
- E. Trash, waste paper, garbage, and junk will be stored in a trash trailer and will be contained to prevent scattering by the wind.
- F. All trash and debris will be removed from the wellsite within 30 days after completing drilling, completion, and construction operations and will be disposed of in an approved trash disposal facility.

8. Ancillary Facilities

None are necessary.

9. Well Site Layout

- A. The well location and the 400 ft X 400 ft surrounding area have been surveyed and flagged.
- B. Dimensions and relative location of the drill pad, pit, and equipment are shown on Exhibits 'A', 'B', and 'G'.
- C. Top soil for the restoration will be stock-piled on the north and east sides of the location.

10. Plans for Restoration of the Surface

- A. After completion of drilling, completion, and construction operations, all equipment and other material not needed for operations will be removed. Pits will be filled and the location cleaned of all trash and junk so as to leave the wellsite in an as aesthetically pleasing condition as possible.
- B. Any unguarded pits containing fluids will be fenced until they are filled.
- C. If the well is not productive, the disturbed area will be restored to Federal Agency requirements and will be accomplished as expeditiously as possible.

11. Surface Ownership

- A. All the surface in Section 24 is Public Land.

12. Other Information

- A. Topography: The area is described as a sandy dunal plain of moderate undulation with relatively small and shallow deflation basins.
- B. Soil: Described as being Kermit-Berino association which are sandy, deep soils from wind-worked mixed sand deposits.
- C. Flora and Fauna: The vegetation consists primarily of shin oak, sagebrush, yucca, broom snakeweed, cat claw, assorted grasses, mesquite and other flora. No wildlife was observed but probably consists primarily of small reptiles and rodents.
- D. Pond or Streams: There are no pond or streams within one mile.
- E. Residences and Other Structures: There are no known structures or residences within one half mile of the location.
- F. Archaeological, Historical, and other Cultural Sites: An archaeological survey of the well pad and road will be made by Desert West Archaeological Services, Carlsbad, NM as soon as possible. A copy of their report will be filed with the Bureau of Land Management as soon as it is available..

Exhibit "E"  
Eight Point Compliance Program  
**KCS Medallion Resources, Inc.**  
7130 South Lewis Avenue, Suit 700  
Tulsa, OK 74139-5489

Drilling Plan

Shugart West "24" Federal No. 1  
2310 ft FSL & 330 ft FEL  
Sec. 24, T18S, R30E N.M.P.M.  
Eddy Co. New Mexico

Lease No.: NM 93771 out of NM 025503  
Lease Description: NE/4 SW/4, N/2 SE/4 &  
N/2 NE/4 of Sec. 24

1. Estimated Tops of Geologic Markers

<u>Horizon</u>	<u>Depth ft</u>	<u>Sea Level Datum</u>
Surface	0	+3.632
Anhydrite	515	+3.115
B/Salt	1,771	+1.861
Yates	1,929	+1.703
7-Rivers	2,164	+1.468
Queen	3,114	+518
Penrose	3,390	+242
Grayburg	3,590	+42
San Andres	4,328	-696
Delaware	4,770	-1,138
Bone Springs	5,800	-2168
1 <sup>st</sup> Bone Springs sd.	7,640	-4,008
2 <sup>nd</sup> Bone Springs dolo.	8,170	-4,538
Total Depth	8,500	-4,868

2. Estimated Depths of Water, Oil or Minerals

A. Fresh Water

It is possible that fresh water zones could be encountered at depths up to 200 to 300 ft. Any zones encountered will be protected by the 13 5/8" casing set at 760 ft and by the 8 5/8" casing set at 2800 ft. Both strings of casing will be cemented to the surface.

B. Oil and Gas

Oil in the Bone Springs Sand is the primary objective of this well. It is also possible that shows of gas or oil may be encountered in other zones. Potentially productive horizons, as indicated by samples and/or electric logs will be protected by 5 1/2" casing with cement up to a minimum of 500 ft above the upper-most zone of interest.



2. The Operators Minimum Specifications for Pressure Control

- A. Exhibit F is a schematic diagram of the blowout prevention equipment. The annular BOP and rams will be hydraulically tested to 2750 psig (70% of the internal yield strength of the 8 5/8" 32 lb/ft. J55 casing) after nipping up and after any use under pressure. Annular and pipe rams will be operationally tested each 24 hr period and blind rams will be tested each time the drill pipe is out of the hole. Accessories to the BOP will include a floor safety valve and a choke manifold with a pressure rating equivalent to the BOP stack
- B. Testing Procedures:
1. All casing below the surface string will be tested to .22 psig/ft or to 1500 psig, whichever is greater, but not to exceed 70% of the internal yield strength of the casing.
  2. All ram type preventers will be tested to the rated working pressure of the stack or to 70% of the minimum internal yield of the casing, whichever is less.
  3. Tests will be performed at the time of installation, and prior to drilling out of the casing shoe, and at least every 30 days.
  4. The intermediate casing string will be tested prior to drillout by drilling cement to within 15-20 ft of the shoe, raising the drillstring off bottom, closing the pipe rams, and raising the casing pressure to the desired pressure.
  5. The production string will be tested prior to drillout or perforating by pressuring to the desired pressure.
- D. No over pressured formations are expected to be encountered, however drilling fluid levels will be visually monitored while circulating the reserve pit. A flow rate monitor will be installed in the mud flow line and fluid level indicators will be installed on the steel circulating tanks.

4. Proposed Casing and Cementing Programs

- A. All casing below the conductor will either be new and manufactured to API specifications or used and reconditioned to Grade "A" specifications. Minimum casing specifications are shown below.

String	Size	Wt/ft	Grade	Thread Type	Setting Depth	Condition
1.	20"	52.73#	Sch 10	NA	40' to 80'	Used, Grd. A
2.	13 3/8"	48#	H40	8 rnd. ST & C	760'	New or Used, Grd. A
3.	8 5/8"	32#	J55	8 rnd. ST & C	2,800'	New or Used, Grd. A
4.	5 1/2"	17#	J55	8 rnd. LT & C	0' to 900'	New or Used, Grd. A
	5 1/2"	15.5#	J55	8 rnd. LT & C	900' to 6200'	New or Used, Grd. A
	5 1/2"	17#	J55	8 rnd. LT & C	6200' to 8500'	New or Used, Grd. A

B. Cementing

1. The hole for the conductor casing will be cut with a rat hole digger and sufficient hole will be cut to drill into consolidated sediments. Since the casing comes in 40 ft lengths, either 40ft or 80 ft of hole will be drilled depending on the consolidation of the underlying sediments. After drilling is completed

casing will be set on bottom and cemented to the surface with ready-mix cement.

2. The 13 3/8" surface casing will be set at approximately 760 ft in 17 1/2" hole using a guide shoe, insert float, and at least three centralizers. It will be cemented to the surface with 100% excess slurry consisting of a lead slurry of 320 sacks of Class 'H' cement + 3% D79 + 0.25pps of D29 mixed with 14.14 gal/sk of water for a weight of 12.0 ppg and a yield of 2.39 cf/sack, followed by a tail slurry of 200 sacks of Class 'C' Cement + 2% S1 mixed with 6.3 gal/sk of water for a weight of 14.8 ppg and a slurry yield of 1.34 cu ft/sack. 1" pipe and a 100 sack top out system will be available in the event that the cement does not circulate.
3. The 8 5/8" intermediate casing will be set at approximately 2800 ft in 11" hole using a float shoe, a float collar, and at least 6 centralizers. The slurry design will provide 100% excess and will include a lead slurry of 480 sacks of class 'H' cement + 3% D79 + 0.25 ppg of D29 mixed with 14.14 gal/sk of water for a weight of 12.0 ppg and a yield of 2.39 cf/sack followed by a tail slurry of 200 sacks of Class 'C' Cement + 1% S1 mixed with 6.3 gal/sk of water for a weight of 14.8 ppg and a yield of 1.33 cf/sack.
3. If run, the 5 1/2" production string will be set at about 8,500 ft in 7 7/8" hole. A float shoe, a float collar, and sufficient centralizers to centralize the casing through all prospective pay zones will be run. Sufficient slurry will be pumped to cover the uppermost prospective zone with at least 500 ft of cement using at least 20% excess slurry. Assuming a First Bone Springs Sand completion with casing set at 8,500 ft and a desired cement top of 7,000 ft (Bone Springs Sand top estimated to be below 7500 ft), the casing would be cemented with a lead system of 25 sacks of 50:50 Poz:Class 'H' Cement: +2.5% D44(bwow) + 2% D20 + 0.2% D59, mixed with 12.52gal/sk of water for a weight of 12.0 ppg and a yield of 2.18 cf/sack. The slurry would be preceded by 20 bbls of CW-7 Chemical Wash. This slurry would be followed by a tail system of 245 sacks of 50:50 Poz:Class 'H' Cement +5%D44(bwow) + 2% D20 + 0.2% D59. The top of the lead slurry should reach to about 6750 ft.

A stage collar will be run in the 5 1/2" casing at about 4300 ft. The casing will be cemented through the stage collar with a lead slurry consisting of approximately 160 sacks of 35:65 Poz:Class H cement + 5% D44(bwow) + 6% D20 mixed with 12.94 gal/sk of water for a weight of 12.2 ppg and a yield of 2.27 cf/sk followed by a tail slurry of 50 sacks of Class 'H' cement + 1% S1 mixed with 5.21 gal/sk of water for a mixed weight of 15.6 ppg and a yield of 1.19 cf/sk. These slurry volumes are approximate as they will be adjusted to the actual hole volume as determined by a caliper log to be run over the interval to be cemented. Sufficient slurry will be pumped to put the top of the cement up to about 2,300 ft; i.e., 500 ft into the 8 5/8" surface casing.

4. Casing seats shown are at approximate depths and cement volumes are approximate. Actual volumes may vary depending upon hole conditions and actual casing setting depths.

5. Drilling Fluid Program

A. Fluid Characteristics by Interval

1. 0 to 760 ft. Fresh water, native mud, gel, & LCM.

Weight	8.6 to 9.0 ppg
Viscosity	27 - 45 sec/qt
Fluid Loss	NC
ph	9.5 - 10
LCM	as needed
2. 760 ft to 2800 ft. Brine/ water, gel, caustic soda, lime, & polymer.

Weight	9.7 to 10.0 ppg
Viscosity	27 to 34 sec/qt
Fluid loss	NC
ph	9.5 - 10.5
LCM	as needed
3. 2800 to 6,000. Fresh water, gel, polymer, KCl, caustic soda, and lime

Weight	8.4 - 8.6 ppg
Viscosity	27 to 30 sec/qt
Fluid loss	NC
ph	9.5 - 10.0
LCM	as needed
4. 6,000 to 8,500. Fresh water, KCl, polymer, gel, caustic soda, and lime

Weight	8.8 - 9.0 ppg
Viscosity	30 to 32 sec/qt
Fluid loss	10 cc
ph	9.5 - 10.0
LCM	as needed

- B. Adequate stocks of drilling fluid materials will be on hand to handle lost circulation and/or kicks should they occur.

6. Testing, Logging, Coring, and Completion Programs

A. Testing:

The Bone Springs Sand is the primary objective in this well and will possibly be drillstem tested if present. Other zones may be tested if hydrocarbon shows are encountered.

B. Logging:

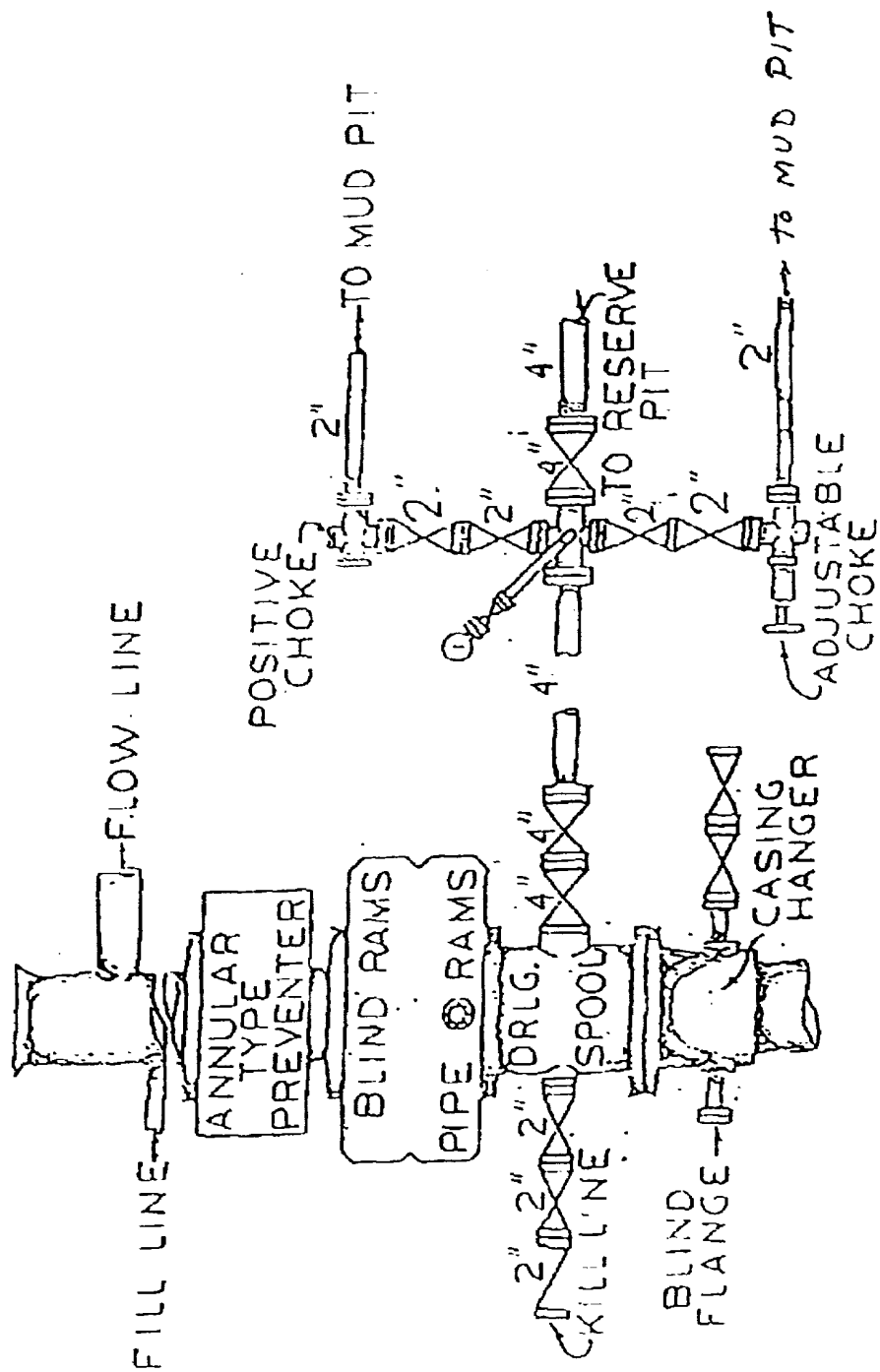
A Gamma Ray/Compensated Neutron log will be run from the surface to TD.  
A Dual Laterolog and a Formation Density Log will be run from TD to 7600 ft and from 6000ft to 4700 ft..  
A Mud Logger will be installed and in operation from 4800 ft to TD.

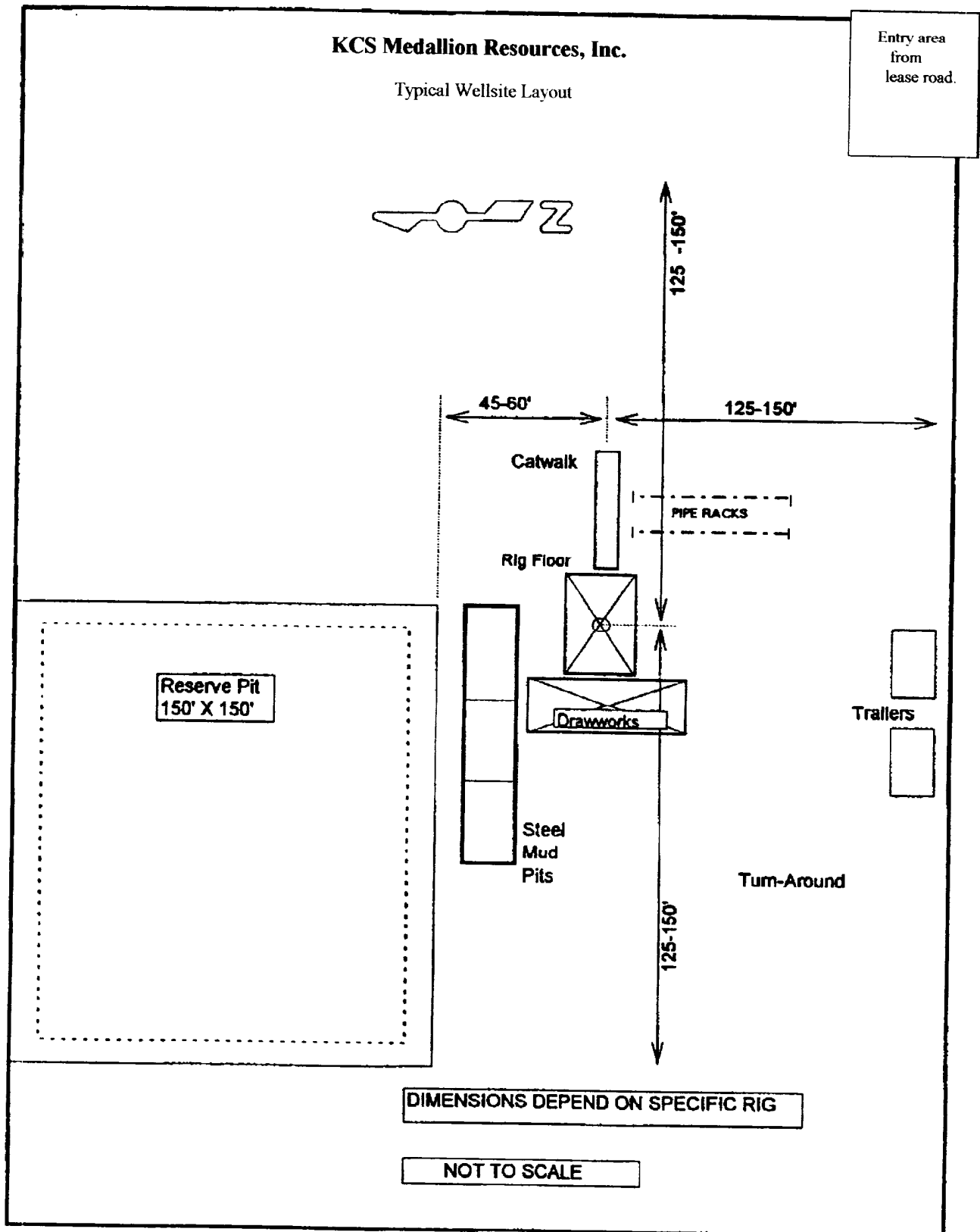
C. Coring:

No conventional coring is anticipated. Sidewall cores may be taken over zones of interest.

**Exhibit "F"**  
**KCS Medallion Resources, Inc.**  
 Typical BOP Equipment Arrangement

All BOP Equipment to be 3000 psig Working Pressure or Greater





## **Exhibit "I"**

### **KCS Medallion Resources, Inc.**

#### **Hydrogen Sulfide Drilling Operations Plan**

##### **I. Hydrogen Sulfide Training.**

- A. All rig crews and company personnel will receive training from a qualified instructor in the following areas prior to penetrating any hydrogen sulfide bearing formations during drilling operations:
  - 1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
  - 2. The proper use and maintenance of H<sub>2</sub>S safety equipment and of personal protective equipment to be utilized at the location, such as H<sub>2</sub>S detection monitors, alarms, warning systems, and breathing equipment. Briefing areas and evacuation procedures will also be discussed and established.
  - 3. Proper rescue techniques and procedures will be discussed and established.
- B. In addition to the above, supervisory personnel will be trained in the prevention of oil and gas well blowouts in accordance with Minerals Management Service Standards Subpart -0- 250 - 212.

Prior to penetrating any known H<sub>2</sub>S bearing formation, H<sub>2</sub>S training will be required at the well site for all rig crews and company personnel that have not previously had such training. This instruction will be provided by a qualified instructor with each individual being required to pass a 20 question test regarding H<sub>2</sub>S safety procedures. All contract personnel employed on an unscheduled basis will be required to have received appropriate H<sub>2</sub>S training.

The Hydrogen Sulfide Drilling Operations Plan will be available at the well site during drilling operations.

##### **II H<sub>2</sub>S Safety Equipment and Systems.**

- A. All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling operations reach a depth approximately 500 ft above any known or probable H<sub>2</sub>S bearing formation. The safety systems to be utilized during drilling operations are as follows:
  - 1. Well Control Equipment:
    - a. Annular BOP with a properly sized closing unit so as to accommodate all pipe sizes in use.
    - b. A choke manifold with a minimum of one remote choke.
  - 2. H<sub>2</sub>S Detection and Monitoring Equipment:
    - a. Three(3) H<sub>2</sub>S detection monitors will be placed in service at the location. One monitor will be placed near the bell nipple on the rig floor; one will be placed at the rig substructure; and one will be at the working mud pits or shale shaker.

- alert personnel when H<sub>2</sub>S levels reach 10 ppm.
  - b. One Sensidyne pump or equivalent with appropriate detection tubes will also be available to perform spot checks for H<sub>2</sub>S concentrations in any remote or isolated areas.
- 3. Protective Equipment for Essential Personnel.
  - a. Four(4) five minute escape packs located at strategic points around the rig.
  - b. Two(2) thirty minute rescue packs to be located at the designated briefing areas
- 4. Visual Warning System.

The visual warning system will consist of the following:

  - a. Three(3) wind direction indicators.
  - b. Two(2) condition/warning signs which will be posted on the road providing direct access to the location. One sign will be placed at the point that the access road leaves the public road; the second sign will be placed where the access road enters the location. The signs will contain lettering of sufficient size to be readable at a reasonable distance from the immediate vicinity. The sign will inform the public that a hydrogen sulfide gas environment could be encountered at the location

**KCS Medallion Resources, Inc.**

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