0014

File ACT/007/009
Route to Lee

SCOTT M. MATHESON
Governor

TEMPLE A. REYNOLDS
*Executive Director, NATURAL RESOURCES*

CLEON B. FEIGHT
*Director*

**STATE OF UTAH**
**DEPARTMENT OF NATURAL RESOURCES**
**DIVISION OF OIL, GAS, AND MINING**
**1588 West North Temple**
**Salt Lake City, Utah 84116**
**(801) 533-5771**

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NOV 06 1981

Dalton

September 18, 1981

Nish 11-3-81

I reviewed the MRP on 1-27-81. At that time the MRP was returned to you for transfer to OGM

Mr. John Livesay
Division of Wildlife Resources
Southeastern Regional Office
455 West Railroad Avenue
Price, Utah 84501

RE: Vegetation Study
Additions
Eureka Energy Company
Sage Point-Dugout Mine
ACT/007/009
Carbon County, Utah

Dear Mr. Livesay:

Enclosed is a copy of some additional pages of Eureka Energy Company's vegetation plan for their Sage Point-Dugout Canyon Mine that were recently received by the Division of Oil, Gas and Mining (DOGM). These pages should be added to or replace pages in your Sage Point-Dugout Canyon Mining and Reclamation Plan (MRP).

At this time, DOGM is reviewing the Sage Point-Dugout Canyon MRP to determine if it is complete. We would appreciate it if your office would forward any comments or concerns on this MRP to DOGM before October 14.

If you have any questions, please contact me. Thank you for your cooperation.

Sincerely,

for JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

Enclosure

JWS/SCL/btm

rec'd 11-5-81
RAS

Section IV-F

VEGETATION

SEP 0 4 1981

DIVISION OF
OIL, GAS & MINING

Table of Contents

| | | Page |
|---|---|---|
| 1. | Introduction | II-276 |
| | 1.1 Guidelines | II-277 |
| | 1.2 Methodology | II-277 |
| | 1.2.1 Vegetation Type Delineation and Mapping | II-277 |
| | 1.2.2 Plant Species List | II-278 |
| | 1.2.3 Plot Location and Field Sampling | II-278 |
| | 1.2.4 Sampling Intensity | II-282 |
| | 1.2.5 Comparison of Disturbed Areas and Reference Areas | II-282 |
| | 1.3 Contributors | II-284 |
| 2. | Existing Resources (783.19) | II-285 |
| | 2.1 Description of Vegetation Communities | II-285 |
| | 2.2 Cover Data | II-290 |
| | 2.3 Productivity Data | II-292 |
| | 2.4 Tree Density and Shrub Density | II-293A |
| | 2.5 Size Classes and Tree Stand Maturity | II-294 |
| | 2.6 Shrub Height | II-295 |
| | 2.7 Sampling Intensity for Productivity and Cover | II-296 |

## List of Tables


| Table | | After Page |
|---|---|---|
| IV-F.1 | Predominant Plant Species by Community Type | II-285 |
| IV-F.2 | Percent Cover by Life Form in Areas of Potential Disturbance | II-290 |
| IV-F.3 | Percent Vegetation, Litter, Rock, and Cryptogam Cover | II-291 |
| IV-F.4 | Percent Cover by Species in Major Communities | II-291 |
| IV-F.5 | Productivity Data | II-292 |
| IV-F.6 | Productivity by Species in Major Communities | II-292 |
| IV-F.7 | Tree Density Summary | II-293 |
| IV-F.8 | Percent Species Composition of Trees | II-293 |
| IV-F.8½ | Shrub Density Summary | II-294A(1) |
| IV-F.9 | Percent of Trees in Areas of Potential Disturbance Falling Within Basal Stem Circumference Categories | II-294A(2) |
| IV-F.10 | Mean Shrub Heights in Areas of Potential Disturbance | II-295 |
| IV-F.11 | Shrub Heights | II-295 |
| IV-F.12 | Sampling Intensity | II-296 |

juniper, and mixed conifer). However, these data give an indication of the total amount of forage available to grazing or browsing animals. Differences in the palatability of various plant species, proper intensity of animal use to sustain production, and yearly fluctuations in production resulting from climatic variation would also have to be considered before true animal carrying capacities could be calculated.

Exclosures were not installed to protect productivity sample plots since the study was initiated late in the growing season. However, the absence of protective exclosures had minimal effect, since grazing occurred primarily in Pine Canyon. Grasses, grass-like plants, forbs, and shrubs were heavily utilized by cattle in the deciduous streambank community in Pace Canyon, but grazing pressure appeared to be very light in the Douglas fir and mixed conifer-mountain brush communities.

## 2.4 TREE DENSITY AND SHRUB DENSITY

Tree density was greatest in the Douglas fir community (Table IV-F.7). In the areas of potential disturbance, the pinyon-juniper community had the next greatest tree density, followed by the deciduous streambank mixed conifer communities. Next in order of decreasing tree density were mixed conifer-mountain brush and shrub-grass juniper. Tree densities on the reference area plots did not follow these relationships

in all cases, primarily because the sample size in reference areas was smaller. Data for the area of potential disturbance is more representative of the overall study area.

The percent species composition of trees measured by the point-centered quarter method was also determined for each community (Table IV-F.8). Pinyon was found in every community where coniferous trees were observed, and it was the most abundant tree species in the mixed conifer-mountain brush community. Utah juniper was the most abundant tree species in the pinyon-juniper and shrub-grass-juniper types. It also occurred in mixed conifer and mixed conifer-mountain brush communities. Ponderosa pine was limited to Douglas fir and mixed conifer-mountain brush communities in Pine Canyon, while Rocky Mountain juniper was found in mixed conifer and Douglas fir types. Douglas fir, Rocky Mountain maple, narrow-leaf cottonwood, and Utah juniper were dominant in the deciduous streambank community.

Since tree density was not a good measure of the abundance of woody species in the greasewood-sagebrush and shrub-grass-juniper communities, shrub density was estimated for these two communities. The results of the field measurements are presented in Table IV-F.8½. During the field measurements, the following species were encountered:

Greasewood-sagebrush community

<u>Artemisia</u> <u>tridentata</u>

<u>Chrysothamnus</u> <u>viscidiflorus</u>

*Xanthocephalum sarothrae*

*Atriplex confertifolia*

*Sarcobatus verniculatus*

*Juniperus osteosperma*

*Pinus edulis*

Shrub-grass-juniper community

*Artemisia nova*

*Eriogonum corymbosum* var. *davidsei*

*Glossopetalon meionandra*

*Xanthocephalum sarothrae*

*Artemisia tridentata*

*Pinus edulis*

*Juniperus osteosperma*

*Atriplex confertifolia*

## 2.5 SIZE CLASSES AND TREE STAND MATURITY

Basal stem circumference of trees is often closely correlated to tree age, although this relationship was not determined for this study. This procedure (see methodology) was necessary because of the unusual growth habit of juniper. The percent of trees falling within several basal circumference categories gives an indication of the maturity of each tree stand (Table IV-F.9)

Table IV-F. 8½ (page 1 of 2) Shrub density summary.

Greasewood Sagebrush

| | 17-44 | 18-19 | 23-5 | 26-25 | 26-38 | 26-46 |
|---|---|---|---|---|---|---|
| 1. | 4.40* | 1.60 | 4.85 | 2.80 | 1.80 | 1.58 |
| 2. | 3.65 | 1.75 | 6.10 | 3.33 | 1.18 | 1.48 |
| 3. | 3.65 | 1.78 | 5.08 | 2.45 | 1.65 | 2.40 |
| 4. | 1.98 | 1.48 | 5.28 | 2.85 | 2.38 | 1.10 |
| 5. | 2.15 | 3.08 | 5.35 | 3.48 | 1.38 | 2.28 |
| 6. | 3.00 | 1.78 | 3.50 | 2.70 | 2.88 | 2.40 |
| 7. | 5.55 | 3.10 | 3.50 | 2.13 | 4.80 | 1.33 |
| 8. | 2.55 | 2.63 | 2.40 | 3.40 | 1.98 | 3.55 |
| 9. | 2.35 | 2.33 | 2.40 | 2.30 | 1.78 | 2.73 |
| 10. | 3.55 | 1.83 | 4.13 | 1.30 | 1.45 | 2.40 |

| | 28-20 | 65-13 | 76-15 | 89-16 | 101-35 |
|---|---|---|---|---|---|
| 1. | 4.03 | 3.08 | 4.05 | 3.35 | 2.03 |
| 2. | 3.43 | 3.30 | 4.05 | 3.35 | 2.53 |
| 3. | 5.23 | 2.25 | 4.28 | 2.15 | 2.05 |
| 4. | 6.68 | 2.45 | 4.48 | 2.83 | 1.88 |
| 5. | 5.15 | 5.15 | 4.13 | 2.25 | 2.23 |
| 6. | 3.98 | 5.10 | 4.25 | 4.18 | 4.43 |
| 7. | 3.98 | 2.15 | 4.25 | 2.65 | 3.30 |
| 8. | 3.98 | 3.95 | 6.63 | 2.18 | 6.80 |
| 9. | 6.03 | 4.13 | 5.55 | 1.18 | 2.25 |
| 10. | 3.78 | 3.90 | 1.98 | 3.35 | 2.88 |

Mean ($\bar{x}$) = 3.18

Variance ($s^2$) = 1.78

$t_a$ = 1.289

$\Delta x$ = .1 x 3.18 = .32

$$n_{min} = \frac{(1.29)^2(1.78)}{(.32)^2}$$

= 28.9 = 29 (n=110)

$$\text{density: } \frac{1 \text{ plant}}{10.11 \text{ ft}^2} \times \frac{43560 \text{ ft.}^2}{\text{acre}}$$

= 4300 plants per acre (2 significant digits)

*mean value for four measurements at each sampling point

Table IV-F. 8½ (page 2 of 2) Shrub density summary.

Shrub-Grass-Juniper:

| | 23-23 | 41-14 | 49-45 | 66-33 | 66-44 | 99-29 | 103-33 |
|---|---|---|---|---|---|---|---|
| 1. | 2.38 | 1.98 | 3.38 | 8.60 | 8.10 | 4.83 | 3.03 |
| 2. | 2.83 | 1.30 | 2.90 | 8.60 | 4.63 | 4.35 | 2.53 |
| 3. | 2.83 | 5.38 | 3.18 | 5.88 | 6.95 | 8.08 | 4.18 |
| 4. | 2.25 | 1.45 | 6.83 | 11.55 | 5.43 | 8.13 | 9.03 |
| 5. | 4.40 | 1.58 | 6.85 | 11.58 | 1.83 | 4.00 | 5.48 |
| 6. | 4.45 | 1.30 | 8.00 | 11.93 | 1.25 | 4.53 | 5.25 |
| 7. | 4.00 | 2.60 | 4.55 | 11.93 | 1.75 | 6.20 | 5.43 |
| 8. | 4.30 | 4.18 | 1.83 | 6.90 | 1.93 | 6.68 | 7.78 |
| 9. | 9.65 | 4.83 | 0.93 | 8.03 | 1.30 | 5.10 | 8.25 |
| 10. | 9.35 | 3.73 | 2.90 | 10.40 | 1.95 | 9.53 | 9.90 |

| | 110-42 | 116-3 |
|---|---|---|
| 1. | 3.63 | 2.15 |
| 2. | 3.28 | 1.78 |
| 3. | 3.55 | 2.73 |
| 4. | 2.23 | 1.43 |
| 5. | 3.58 | 3.43 |
| 6. | 3.48 | 2.03 |
| 7. | 3.18 | 3.60 |
| 8. | 8.08 | 5.00 |
| 9. | 6.48 | 4.90 |
| 10. | 2.15 | 3.73 |

Mean ($\bar{x}$) = 4.88 $\quad t_a = 1.291$

Variance ($s^2$) = 8.13 $\quad \Delta x = 0.49$

$$n_{min} = \frac{(1.29)^2(8.13)}{(.49)^2} = 56.3 = 57 \ (n = 90)$$

$$\text{density: } \frac{1 \text{ plant}}{23.81 \text{ ft}^2} \times \frac{43560 \text{ ft}^2}{\text{acre}}$$

= 1829 = 1800 plants/acre

(2 significant digits)

## 4. RECLAMATION PLAN: POST-MINING LAND USE (784.15)

The Applicant, who owns the majority of land in the permit area (see Map D03-0004), proposes to return the area to its pre-mining land uses.

Primary pre-mining land uses consist of grazing and wildlife habitat through most of the permit area (see Map G03-0147), as well as a limited amount of farming in Sections 1 and 12, T.14 S., R.11 E. In areas where surface disturbance will result from mining operations, soil reclamation and revegetation will restore the areas to their pre-mining usefulness as rangeland and wildlife habitat. The value of present cropland will be restored or enhanced following mining, since Anderson Reservoir will be enlarged and water availability may increase.

Additional surface areas in the permit area are owned by the State of Utah and the United States. Accordingly, the Applicant requested that the agencies responsible for managing these lands approve and comment on the proposed post-mining land use. As indicated on page II - 467A(3), the Bureau of Land Management prefers the Applicant's proposed post-mining land use of wildlife habitat over any other use.

On State lands, the Applicant has obtained a right-of-way for pipelines, power lines, and roads and a special use lease for a portion of Anderson Reservoir and of the preparation plant waste disposal area. These documents were approved on

March 30, 1981 and July 8, 1981, respectively. As indicated on page II-467A(4), the approval of the lease and right-of-way constituted approval of the proposed post-mining land use (the State has not responded to the Applicant's letter as of September 8, 1981).

# United States Department of the Interior

IN REPLY REFER TO
3400
(U-066)

BUREAU OF LAND MANAGEMENT
Moab District
Price River Resource Area
P. O. Drawer AB
Price, Utah 84501

June 17, 1981

Mr. C. A. Slaboszewicz
Eureka Energy Company
1010 Kearns Building
136 South Main Street
Salt Lake City, Utah 84101

RECEIVED
JUN 22 '81
EUREKA ENERGY CO.
Salt Lake City

Dear Mr. Slaboszewicz:

By your letter of June 9, 1981, you requested our comments on the post-mining land use proposed in your mine plan for those BLM managed lands that will be impacted by the Sage Point-Dugout Project. Returning this land to the original pre-mining status of rangeland and wildlife habitat is preferred over any other post-mining land use.

Sincerely yours,

Leon E. Berggren

Leon E. Berggren
Area Manager

RECEIVED
JUN 22 '81
EUREKA ENERGY CO.
Salt Lake City

EUREKA ENERGY COMPANY

A SUBSIDIARY OF PACIFIC GAS AND ELECTRIC COMPANY

1010 KEARNS BUILDING • 136 SOUTH MAIN STREET • SALT LAKE CITY, UTAH 84101 • (801) 559-3311

August 20, 1981

Mr. Max Wall
Division of State Lands and Forestry
Empire Building Room 411
231 East 400 South
Salt Lake City, Utah 84114

Dear Mr. Wall:

Thank you for sending me the information on Eureka's Right-of-Way No. 2099 and Special Use Lease No. 526. The minutes of the board meetings you sent to me show that these applications were approved by the State Land Board on March 30, 1981 and July 8, 1981, respectively. These documents cover the surface facilities that Eureka proposes to construct on State lands as part of the Sage Point-Dugout Canyon Project.

As I indicated in my letter of June 9, 1981 to John Blake, Division of State Lands, Eureka will reclaim the disturbed surface areas and will implement the post-mining land use of wildlife habitat after mining is completed. Eureka understands that the approval of the lease and right-of-way by the State Land Board constitutes approval of the proposed post-mining land use.

Please contact me if Eureka's understanding of approval of the post-mining land use is incorrect; otherwise I will assume that the State approves of the proposed land use of wildlife habitat. Thank you for your assistance.

Very truly yours,

C. A. Slaboszewicz
Administrative and
Regulatory Services

CAS:hy

bcc: PSA/NKT